# CS40

## Mobile Computer

# User's Manual

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There are U.S. and foreign patents as well as U.S. and foreign patents pending.

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# Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information.

## Safety Information

Your safety is extremely important. Read and follow all warnings and cautions in this document before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

This section explains how to identify and understand warnings, cautions, and notes that are in this document.

**A warning alerts you of an operating procedure, practice, condition, or statement that must be strictly observed to avoid death or serious injury to the persons working on the equipment.**

**A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.**

**Note:** Notes either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.

## Global Services and Support

### Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at **www.intermec.com** and click **Support** > **Returns and Repairs** > **Warranty**.

Disclaimer of warranties: The sample code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided "as is with all faults." All warranties are expressly disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

## Web Support

Visit the Intermec web site at **www.intermec.com** to download our current manuals (in PDF).

Visit the Intermec technical knowledge base (Knowledge Central) at **www.intermec.com** and click **Support** > **Knowledge Central** to review technical information or to request technical support for your Intermec product.

## Telephone Support

In the U.S.A. and Canada, call **1-800-755-5505**.

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec web site, click **About Us** > **Contact Us**.

## Service Location Support

For the most current listing of service locations, click **Support** >**Returns and Repairs** > **Repair Locations.**

For technical support in South Korea, use the after service locations listed below:

**AWOO Systems**
102-1304 SK Ventium
522 Dangjung-dong
Gunpo-si, Gyeonggi-do Korea, South 435-776
Contact: Mr. Sinbum Kang
Telephone: +82-31-436-1191
E-mail: **mjyun@awoo.co.kr**

**IN Information System PTD LTD**
6th Floor
Daegu Venture Center Bldg 95
Shinchun 3 Dong
Donggu, Daegu City, Korea
E-mail: **jmyou@idif.co.kr** or **korlim@gw.idif.co.kr**

## Who Should Read This Manual

This manual is written for the person who is responsible for installing, configuring, and maintaining the CS40 Mobile Computer.

This manual provides you with information about the features of the CS40, and how to install, configure, operate, maintain, and troubleshoot it.

Before you work with the CS40, you should be familiar with your network and general networking terms, such as IP address.

## Related Documents

You may find these related software and programming documents useful:

- *Intermec Settings Command Reference Manual*
- *Intermec Developer Library (IDL) Resource Kit Developer's Guide*
- *Intermec Terminal Emulator User's Guide*
- *Intermec Browser User's Manual*
- *Intermec Launcher Version 2.00 User's Guide*
- *Intermec Connection Manager User's Guide*

The Intermec web site at **www.intermec.com** contains our documents (as PDF files) that you can download for free.

### To download documents

1. Visit the Intermec web site at **www.intermec.com**.
2. Click the **Products** tab.
3. Use the **Products** menu, navigate to your product page. For example, to find the CS40 computer product page, select **Computers** > **Handheld Computers** > **CS40**.
4. Click the **Manuals** tab.

If your product does not have its own product page, click **Support** > **Manuals**. Use the **Product Category** field, the **Product Family** field, and the **Product** field to help you locate the documentation for your product.

# Patent Information

Product is covered by one or more of the following patents:

4882476; 4894523; 4953113; 4961043; 4970379; 4988852; 5019699; 5021642; 5038024; 5081343; 5095197; 5144119; 5144121; 5182441; 5187355; 5187356; 5195183; 5216233; 5216550; 5195183; 5195183; 5218191; 5227614; 5233172; 5241488; 5243602; 5258606; 5278487; 5288985; 5308966; 5322991; 5331136; 5331580; 5342210; 5349678; 5359185; 5371858; 5373478; 5389770; 5397885; 5410141; 5414251; 5416463; 5442167; 5464972; 5468947; 5468950; 5477044; 5486689; 5488575; 5500516; 5502297; 5504367; 5508599; 5514858; 5530619; 5534684; 5536924; 5539191; 5541419; 5548108; 5550362; 5550364; 5565669; 5567925; 5568645; 5572007; 5576529; 5592512; 5594230; 5598007; 5608578; 5616909; 5619027; 5627360; 5640001; 5657317; 5659431; 5671436; 5672860; 5684290; 5719678; 5729003; 5742041; 5761219; 5764798; 5777308; 5777309; 5777310; 5786583; 5793604; 5798509; 5798513; 5804805; 5805807; 5811776; 5811777; 5818027; 5821523; 5828052; 5831819; 5834753; 5834749; 5837987; 5841121; 5842070; 5844222; 5854478; 5862267; 5869840; 5873070; 5877486; 5878395; 5883492; 5883493; 5886338; 5889386; 5892971; 5895906; 5898162; 5902987; 5902988; 5912452; 5923022; 5936224; 5949056; 5969321; 5969326; 5969328; 5979768; 5986435; 5987192; 5987499; 5992750; 6003775; 6012640; 6016960; 6018597; 6024289; 6034379; 6036093; 6039252; 6064763; 6075340; 6095422; 6097839; 6102289; 6102295; 6109528; 6119941; 6128414; 6138915; 6149061; 6149063; 6152370; 6155490; 6158661; 6164542; 6164545; 6173893; 6195053; 6234393; 6234395; 6244512; 6249008; 6328214; 6330975; 6345765; 6356949; 6367699; 6375075; 6375076; 6375344; 6431451; 6435411; 6484944; 6488209; 6497368; 6532152; 6538413; 6539422; 6621942; 6641046; 6681994; 6687403; 6688523; 6732930

There may be other U.S. and foreign patents pending.

# 1

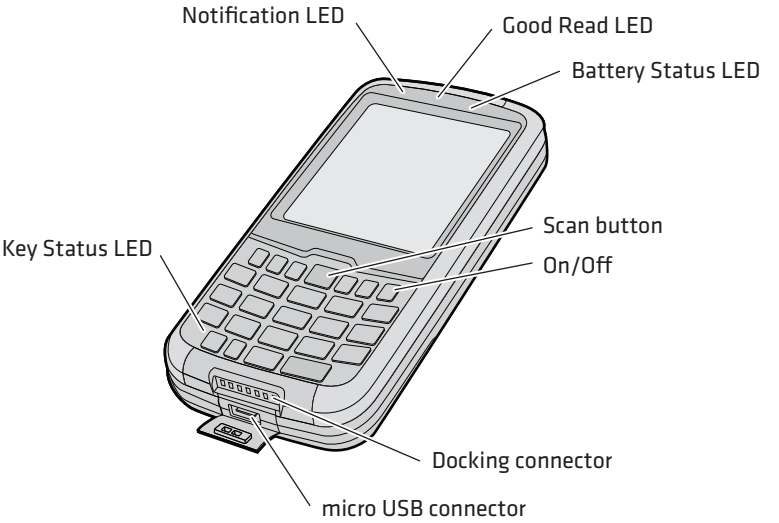
# Using the Computer

This chapter introduces the CS40 Mobile Computer with Microsoft® Windows® Mobile 6.5. Use this chapter to learn about the basic features and functions of the CS40, as well as the available accessories for the CS40.

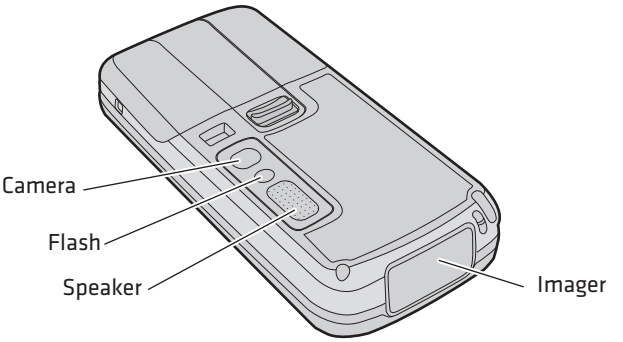
# About the CS40 Mobile Computer

The Intermec CS40 Mobile Computer is a lightweight, rugged mobile computer built on the Microsoft Windows Mobile 6.5 operating system. This SmartPhone style mobile computer supports the latest High Speed Uplink Packet Access (HSUPA).

***CS40 Front View***




***CS40 Back View***



# Overview of CS40 Features

The CS40 includes these standard features:

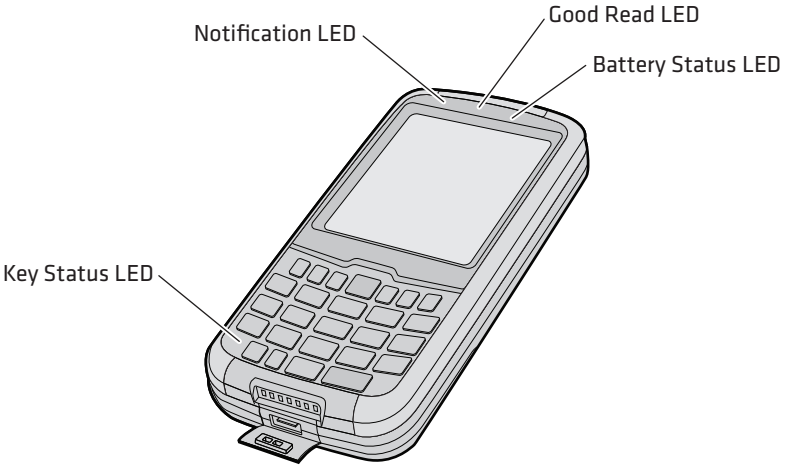
- EA11 area imager that can read bar codes and capture signatures
- Multi-processor architecture with 256 MB DRAM and 512 MB Flash (approximately 350 MB free for custom applications)
- 3.75G UMTS (with EDGE, GPRS, and GSM fallback), 802.11b/g CCX v4.0, and Bluetooth® radio
- Integrated GPS receiver
- 3-megapixel color camera
- Customer-accessible microSD slot for removable memory cards up to 32 GB
- Customer-accessible SIM card slot
- Accelerometer that senses the angle of the computer and automatically rotates the display between portrait and landscape
- Numeric or QWERTY keypad

The CS40 Mobile Computer with an IEEE 802.11b/g radio installed is Wi-Fi® certified for interoperability with other 802.11b/g wireless LAN devices.

# About the Status LEDs

The CS40 has four status LEDs.

***Location of the CS40 Status LEDs***



### Status LED Descriptions

| LED | Color | Description |
|---|---|---|
| Notification | Orange | The computer is notifying you of a pending alarm or message. |
| Good Read | Green | The computer has successfully decoded a bar code. |
| Battery | | See **"About Battery Status" on page 9**. |
| Key Status | Green | Caps Lock is enabled (QWERTY keypad).<br>Green function keys are enabled (numeric keypad). |
| | Orange | Orange function keys are enabled. |

# CS40 Accessories

Your CS40 ships with a battery and a universal cell phone charger. All other accessories are sold and ordered separately. For help, contact your local Intermec sales representative.

### CS40 Accessories

| Accessory | Description |
|---|---|
| CS40 Battery (Model 1005AB01) | The battery provides main power to the CS40. |
| CS40 Universal Cell Phone Charger | Use the charger to charge the battery installed in the CS40 from an external power supply. |
| CS40 Vehicle Power Adapter (Model 9005AX01) | Use the vehicle power adapter to charge the battery installed the CS40 from your vehicle. |
| CS40 Power and Data Y-Cable | Use the power and data y-cable to simultaneously provide power to your CS40 from an external power supply and provide USB communications with your PC. To use this accessory, you also need the universal cell phone charger. |
| | **Note:** To charge the CS40, you also need to establish a connection to your PC using Microsoft ActiveSync® or Windows Mobile Device Center. |

| Accessory | Description |
|---|---|
| CS40 Vehicle Holder | Use the vehicle holder to hold your CS40 while you are using it in a vehicle. |
| CS40 Holster | Use the holster accessories to carry your CS40 when you are not using it. |
| CS40 Purse | Use the purse accessory to carry your CS40 when you are not using it. |
| CS40 Screen Protector | This accessory provides additional protection for the screen. |
| CS40 Tethered Stylus Replacement Kit | You can order and install a replacement stylus. |
| CS40 USB Cover Replacement Kit | You can order and install a replacement cover for the USB port. |

# Turning On the CS40 for the First Time

The first time you turn on your CS40:

- you are prompted to select the language you want to use. Your language selection applies to text used in the Windows Mobile user interface and Microsoft applications.
- you need to align the touch screen.

To turn on the CS40 for the first time:

1 Insert the battery into the CS40.

The CS40 turns on, and you are prompted to select a language.

**Note:** You cannot change the language once it is loaded on your CS40. The only way to modify the language selection is to reload or update the firmware. For help, see **"Updating the System Software" on page 89**.

2 Use the ⌃, ⌄, and Enter keys to select a language and navigate through the screens.

The language you selected loads on the CS40.

3 Fully charge the battery. For help, see **"About the Battery" on page 6**.

4 When you are prompted, tap the screen to set up your CS40.

5 Follow the onscreen instructions to align the touch screen.

The home screen appears.

# About the Battery

The CS40 uses a battery pack (Model 1005AB01) as its main power source.

Warning

**The battery used in this device may present a fire or chemical burn hazard if it is mistreated. Do not disassemble it, heat it above 100°C (212°F) or incinerate it. Dispose of used batteries promptly. Keep away from children.**

Caution

**If you remove the battery pack before turning off the CS40, the CS40 goes into a power off state and then cold boots. To preserve your data, tap Start and then tap Shutdown to turn off the CS40 before removing the battery.**

# Charging the Battery

You need to fully charge the battery before using your CS40 for the first time.

**Note:** Use only Intermec-approved charging accessories and methods to charge the battery. Do not try to charge the battery through a direct USB connection to a PC.

To charge the battery:

- Use one of the charging accessories in the next table.

### *CS40 Charging Accessories*

| Charging Accessory | Charging Time |
|---|---|
| CS40 Universal Cell Phone Charger | 4 hours |
| CS40 Vehicle Power Adapter | 6 hours |
| CS40 Power and Data Y-Cable (also requires the universal cell phone charger) | Variable. The charge time depends on the amount of power provided by the USB port on yourPC. |
| | **Note:** To charge the CS40 with the power and data y-cable, you also need to establish a connection to your PC using Microsoft ActiveSync or Windows Mobile Device Center. |

# Changing the Battery

If your battery power is low, you need to either charge the battery in the CS40, or replace it with a charged one.

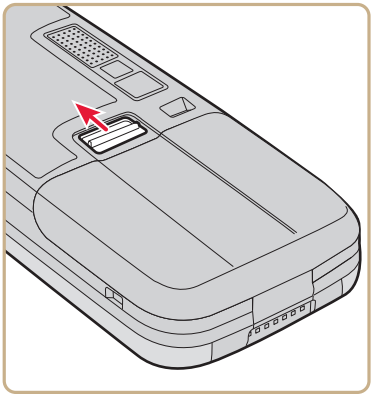
Caution

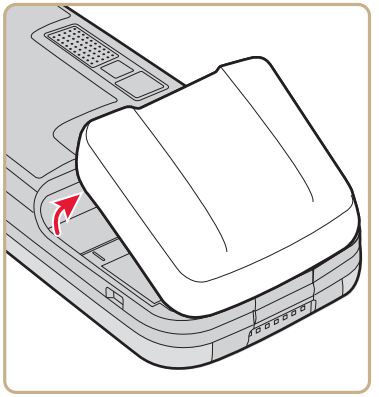
**If you remove the battery pack before turning off the CS40, the CS40 goes into a power off state and then cold boots. To preserve your data, tap Start and then tap Shutdown to turn off the CS40 before removing the battery.**

To change the battery:

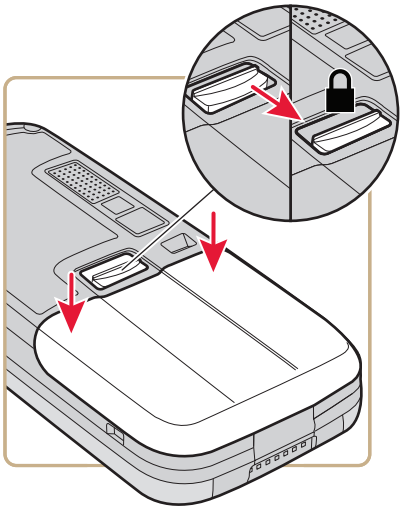
1. Save your files and close any open applications.
2. Tap **Start** > **Shutdown** to turn off the CS40.

**3** Push the battery release tab forward until the battery releases, and lift the battery away from the CS40.





**4** Insert the bottom of a fully charged battery into the CS40, and press down firmly on the top of the battery. Make sure that the battery release tab is fully engaged (locked).



# About Battery Status

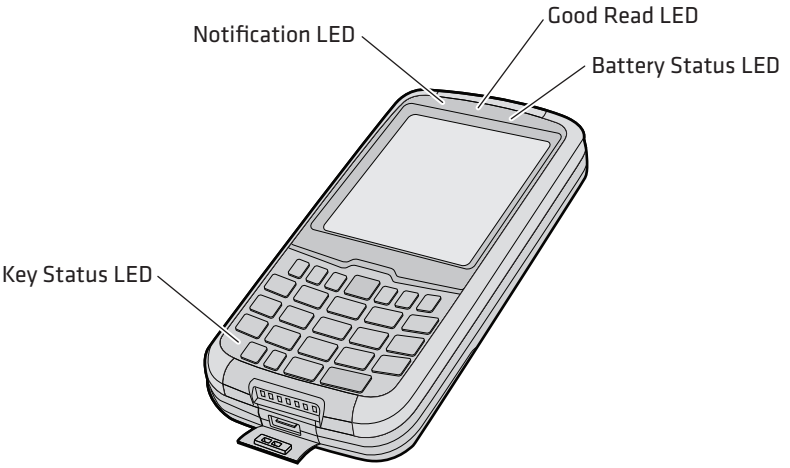
Use the battery icon on the Title bar to see the power status of your battery.

### *Battery Icon Status*

| Battery Icon | Status |
|---|---|
| | Battery is fully charged. |
| | Battery has a medium charge. You should be able to work for several more hours before changing batteries. |
| | Battery is low. You need to charge or replace the battery soon. |
| | Battery is critically low. You need to replace the battery now. |
| | Battery is charging. |

Use the battery status LED to see the charging status of your battery.

### *Location of the CS40 Status LEDs*



### Battery Status LED

| LED State | Description |
|---|---|
| Steady green | The CS40 is connected to a charger and the battery is more than 95% charged. |
| Blinking red | The battery is low. The CS40 goes into Suspend mode. Charge or replace the battery. |
| Steady red | The CS40 is connected to a charger and the battery is charging. |
| Steady orange | There is a battery error. The battery may be outside the allowable charging temperature or you may need to replace the battery. |
| Off | The CS40 is not on external power and the battery is operating normally. |

## About Battery Life and Conservation

Batteries that are stored outside the CS40 for long periods of time slowly discharge. Intermec recommends storing the battery in a charger to maintain battery performance.

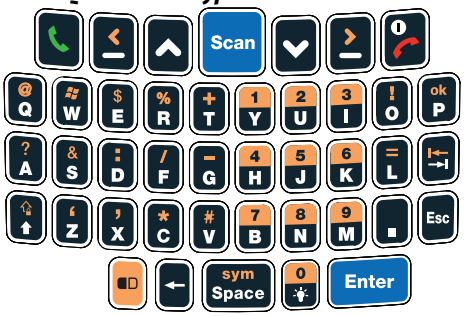
### Battery Conservation Tips

| When You Want To: | Do This to Save Battery Power: |
|---|---|
| Stop using the CS40 for 5 minutes or longer. | Make sure that the low battery icon is not on the screen and the Battery LED is not on. Press and hold the **Power** button for about 4 seconds to suspend the CS40. |
| Store the CS40 for a few days. | Charge the battery or connect the CS40 to a power source. |
| Store the CS40 for several weeks or months. | Charge the battery, and then store the CS40 in a cool location. If you store the CS40 for several months, regularly recharge the battery to keep it at peak performance. |

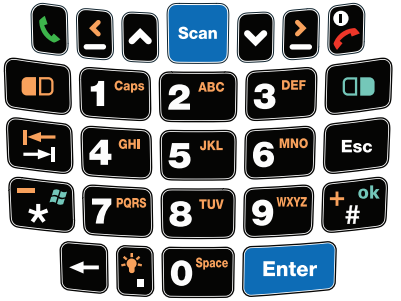
# About the Keypad

The CS40 comes with either a QWERTY keypad or a numeric keypad. When you press a key, the keypad lights up, making the keys easier to read.

***CS40 QWERTY Keypad***




***CS40 Numeric Keypad***




# About the Power Button

When you press and hold the **Power** button for about 4 seconds, you put the CS40 into Suspend mode. This feature is designed to prolong battery life. In this lower power mode, the CS40:

- continues to supply power to all memory.
- turns off power to most hardware, such as the display.
- puts the cell phone radio in standby mode. However, your cell phone still responds to incoming calls.

## Entering Characters on the QWERTY Keypad

You need to use the orange modifier key and the Shift key to access all characters and functions.

To type a character:

- Press the key for that character.

To type a character or access a function on the overlay:

- Press and then press the key for the character or function.

To only type characters or access functions on the overlay:

- Press twice to lock the orange modifier key to stay on, and then press the keys for the characters or functions.

To type a single uppercase letter:

- Press and then the letter key.

To type all uppercase letters:

- Press to turn on Caps Lock, and then press the letter keys.

  You can still type orange modifier characters by pressing and then the key for that character.

  To turn off Caps Lock, press .

## Entering Characters on the Numeric Keypad

You need to use the orange modifier key to access all characters and functions.

To type a character or access a function printed in orange on the overlay:

- Press and then press the key for the character or function.

To type a character or access a function (the Windows Start icon or "ok") printed in green on the overlay:

- Press and then press the key for the character or function.

To type letters above a key:

- Press and then press the key one to four times depending on the position of the letter.

For example, above 2 there are the letters "ABC":

- To type "c", press orange 2 2 2.
- To type "C," press orange 1 and then press orange 2 2 2.

To only type letters:

- Press orange orange to lock the orange modifier key, and then press the key one to four times depending on the position of the letter.

While the orange modifier key is locked, press 1 to toggle between uppercase and lowercase letters.

To unlock the orange modifier key, press orange.

# Configuring the Screen Backlight

You can turn on the backlight to see the screen better, or you can turn off the backlight to help conserve battery power.

To turn the screen backlight on and off:

- If you have a QWERTY keypad, press the sun key.
- If you have a numeric keypad, press orange.

By default, the CS40 goes into Screen Off mode when there is no activity. Screen Off mode turns off the backlight and display. Press a key or tap the screen to resume activity.

To configure the backlight:

1. Tap the Title bar at the top of the screen. The horizontal scroll appears just under the Title bar.
2. Tap the **Battery** icon. The Power screen appears.
3. On the horizontal scroll, select **Advanced**.
4. With **Turn off screen if device not used for** selected, choose a timeout value (1 to 5 minutes).

# Adjusting the Volume

You can adjust the computer volume for your needs and your environment. The volume includes sounds you hear when you tap the screen or read bar codes with the imager. You can set the volume to off, very low, low, medium, high, very high (default), or vibrate.

To adjust the volume:

1. Tap the Title bar at the top of the screen. The horizontal scroll appears just under the Title bar.
2. Tap the **Volume** icon. The Volume window appears.
3. Use your stylus or the ▲ and ▼ keys to adjust the volume sliders for your computer and your phone, select **Vibrate**, or select **Off**.

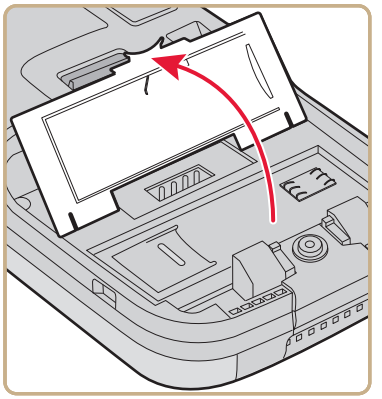
# Inserting a microSD Card

You can use a microSD™ card to increase file storage and install software. The CS40 supports an optional 32 GB maximum capacity microSD card.

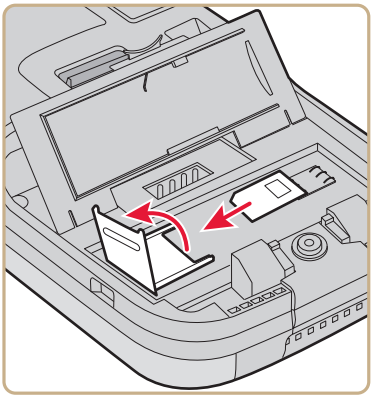
**Note:** The CS40 resets when you remove the battery.

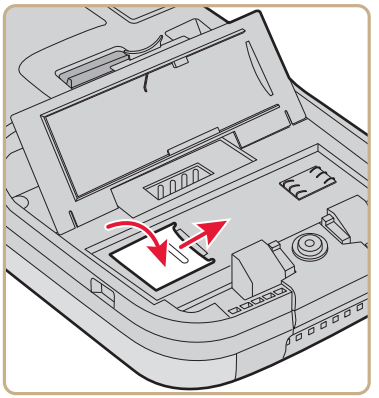
To install a microSD card:

1. Tap **Start > Shutdown** to turn off the CS40.
2. Push the battery release tab forward until the battery releases, and lift the battery away from the CS40.
3. Open the card access door.



4 Slide the microSD card door to the left to unlock it and open the door.



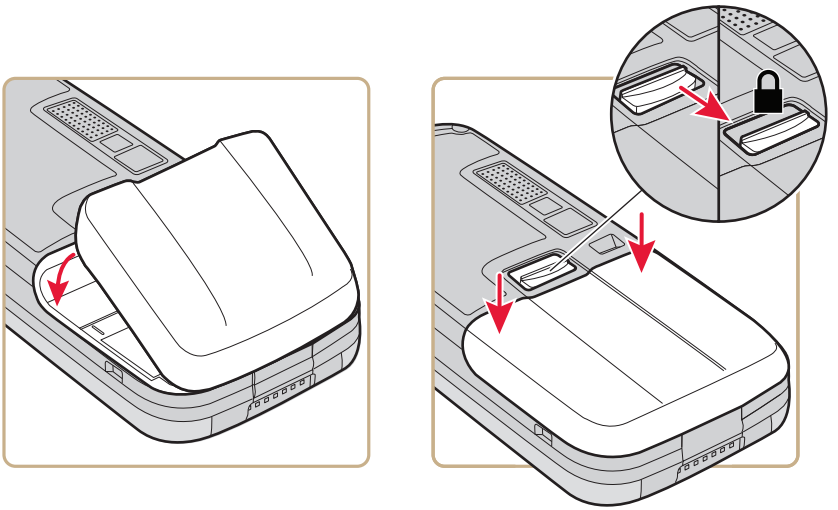


5 Place the microSD card into the slot. Make sure that the card is oriented as show in the previous illustration.

6 Close the microSD card door and slide it to the right to lock it in place.

7 Close the card access door.

8 Install the battery. Press down firmly on the top of the battery, and make sure that the battery release tab is fully engaged.



9 Press the **Power** button. The CS40 cold boots.

# Transferring Files To and From Your PC

You can use Microsoft ActiveSync (Windows XP or earlier) or Windows Mobile Device Center (Windows Vista or Windows 7) to establish a connection between your CS40 and PC. After you connect to your PC, you can transfer files, synchronize files, remotely debug, and perform other device management activities. ActiveSync and Windows Mobile Device Center are a free applications available from the Microsoft web site at **www.windowsmobile.com/getstarted**.

To transfer files to and from your PC:

1 Connect your CS40 to your PC with the power and data y-cable accessory.

2 Install Microsoft ActiveSync or Windows Mobile Device Center on your PC.

# 2

# Understanding the User Interface and Intermec Applications

Use this chapter to learn about the Windows® Mobile® 6.5 user interface and how to interact with the screen. You can also use this chapter to learn about the Intermec applications on your computer, as well as additional Intermec applications you can download.

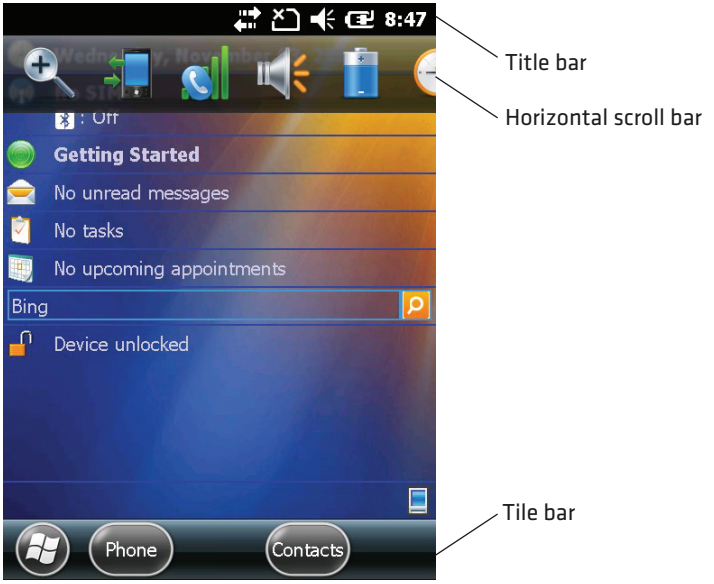
# About the User Interface

The user interface for the Microsoft® Windows® Mobile 6.5 operating system is different from previous versions of Windows. The interface is touch-friendly and easier to navigate. Use the following sections to understand how to interact with Windows Mobile 6.5.

## About the Home Screen

When you turn on your mobile computer, the Home screen is the first screen that appears. The Home screen contains three navigation bars: the Title bar, the horizontal scroll, and the Tile bar.

***The Windows Mobile 6.5 Home Screen***

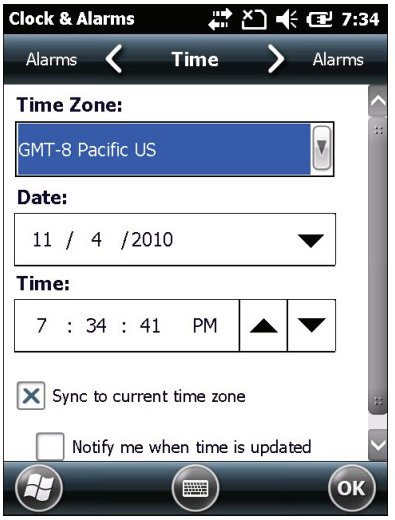



Use the Title bar icons to view the current status of information such as signal strength and battery power remaining. For more information on the Title bar icons, see **"Title Bar Status Icons" on page 20**.

A horizontal scroll appears when you tap an icon in the Title bar. This horizontal scroll makes it easy to access the applications associated with the Tile bar icons. The horizontal scroll also contains a magnifier which improves the touch experience by making parts of the screen large enough to access with your finger.

The horizontal scroll also replaces tabs within Windows screens and allows for easier navigation.

***Clock & Alarms Screen With Horizontal Scroll***




Use the Tile bar to navigate between screens and within applications. The icons available on the Tile bar change depending on the application you are using.

## Interacting With the Screen

The Windows Mobile 6.5 interface supports the use of gestures with the finger or stylus to move around the screen.

### *Supported Gestures*

| Gesture | Description |
|---|---|
| Tap | Represents the left click of a mouse. |
| Double-tap | Represents the left double-click of a mouse. |
| Hold | Represents the right click of a mouse when you press and hold on the screen and a context menu appears. |
| Flick | Initiates scrolling in the direction (horizontal or vertical) the finger or stylus moves across the screen. |
| Pan | Press and hold on the screen and then drag in any direction. |

# Title Bar Status Icons

Clickable icons in the Title bar immediately show you the status of your network, your phone, the volume, the battery, and the time. Use the following table to understand what the icons mean.

### Title Bar Status Icon Descriptions

| Icon | Description |
|---|---|
| | You have a new notification. |
| | You have a new text message. |
| | You have a new e-mail message. |
| | You have a new instant message. |
| | You missed a call. |
| | The speakerphone is on. |
| | The phone is roaming. |
| | An alarm it set. |
| | The microphone is on. |
| | An internet call is in progress. |
| | A Bluetooth headset is detected. |
| | An ActiveSync connection has been established. |
| | There was a problem with the ActiveSync synchronization. |
| | An ActiveSync synchronization is in progress over USB. |
| | A UMTS network is available. |

| Icon | Description |
|---|---|
| | Connecting to a UMTS network. |
| | A UMTS connection is active. |
| | A 3G+ network is available. |
| | An EDGE network is available. |
| | Connecting to an EDGE network. |
| | An EDGE connection is active. |
| | A GPRS network is available. |
| | Connecting to a GPRS network. |
| | A GPRS connection is active. |
| | An HSDPA network is available. |
| | Connecting to an HSDPA network. |
| | An HSDPA connection is active. |
| | Bluetooth is on. |
| | Wi-Fi is on but not connected, and no networks are detected. |
| | Wi-Fi is not connected to a network, and other networks are detected. |
| | Other wireless networks are detected. |
| | Connected to a wireless network. |
| | Synchronizing through a Wi-Fi connection. |
| | Connected to a wireless network, and other networks are detected. |

| Icon | Description |
|---|---|
| | Information about a new wireless network is available. |
| | A network connection is active. |
| | A network connection is inactive. |
| | The phone has maximum signal strength. |
| | The phone has no signal. |
| | The phone capability is off. |
| | The phone has no service. |
| | The phone is searching for service. |
| | Data is being transferred. |
| | A voice call is in progress. |
| | A voice call in on hold. |
| | There is no SIM card present in the computer. |
| | The volume is off and the phone is set to vibrate. |
| | The volume is on. |
| | The volume is off. |
| | The battery has a full charge. |
| | The battery has a high charge. |
| | The battery has a medium charge. |
| | The battery has a low charge. |

| Icon | Description |
|---|---|
| | The battery has a very low charge. |
| | The battery is attached to external power and is charging. |
| | No battery is installed in the computer. |
| | Call forwarding is on. |
| | Voice mail is off. |
| | GPS locator is off. |
| | GPS locator is on. |

## Aligning the Screen

If the touch screen does not responding accurately when you tap it, you may need to align the screen.

To align the screen:

1. Tap **Start > Settings > System > Screen**.
2. Follow the prompts on the screen to complete the alignment.

   Make sure you only use the stylus to complete the alignment process.

# About Intermec Applications

Intermec provides many useful applications to help you configure, troubleshoot, and connect your computer to other devices and networks. You can also download additional applications from Intermec to help you use all of the features available for your mobile computer.

# Applications Available on the Mobile Computer

Use this table to understand some of the Intermec applications available on your computer.

### Intermec Applications Available on the Mobile Computer

| Icon | Application | Description |
|---|---|---|
| | Intermec Settings | Use Intermec Settings to configure your computer. You can use Intermec Settings to individually configure a computer or you can use it through SmartSystems to configure all of your computers. For more information, see **"Using Intermec Settings On the Computer" on page 54**. |
| | Profile Settings | Use Profile Settings to easily configure the computer for a specific use. You can choose predefined values for the Camera, Power, and Scanning.<br>To apply a profile setting:<br>• Tap the Profile Setting you want to use.<br>A message indicating that the changes are saved and a check mark appears next to your choice. You can choose which Profile Settings to display using Intermec Settings. For help, see **"Using Intermec Settings Remotely With SmartSystems Foundation" on page 61**. |
| | iGPS | You can use the iGPS application to improve the performance of GPS on your computer. For more information, see **"Improving GPS Performance on the Computer" on page 50**. |
| | Wireless Center | Use the Wireless Center to turn radios (Wi-Fi, Bluetooth, phone) on and off and configure settings for each radio. |
| | Bluetooth Audio | Use the Bluetooth Audio application to connect to a Bluetooth headset or hands-free device. For more information, see **"Connecting to a Bluetooth Audio Device" on page 67**.**"Interacting With the Screen" on page 19** |
| | Wireless Scanning | Use the Wireless Scanning application to connect to a Bluetooth scanner. For more information, see **"Connecting to a Bluetooth Scanner" on page 65**. |

| Icon | Application | Description |
|---|---|---|
| | Wireless Printing | Use the Wireless Printing application to connect to a Bluetooth printer. For more information, see **"Connecting to a Bluetooth Printer" on page 66**. |
| | ISpyWiFi | Use ISpyWiFi to check your 802.11 status and diagnose what is wrong with the connection. For more information, see **"Checking 802.11 Network Status" on page 96**. |

# Applications You Can Download to the Mobile Computer

You can download several Intermec applications to extend the capabilities of your CS40.

## Viewing Available Applications

To see a list of available applications:

1. On the Intermec web site, select **Products > Computers > Handheld Computers > CS40**.
2. Click the **Downloads** tab.

   The available applications appear in the Applications table.

## About SmartSystems Foundation

SmartSystems™ Foundation is an easy-to-use software platform that provides IT Administrators and Integrators a single, integrated portal for hands-free provisioning, deployment, and management of Intermec devices minimizing the effort spent on software upgrades, equipment monitoring, maintenance and troubleshooting.

SmartSystems Foundation provides a consistent way to manage Intermec devices including mobile computers, RFID readers, printers and bar code scanners, located on-site or remote, to make the most of limited IT resources, and lower the total cost of ownership for Intermec data collection equipment. SmartSystems Foundation can be downloaded at no charge from the Intermec web site. For more information, visit **www.intermec.com\SmartSystems**.

## About Features Demo

Intermec Features Demo provides a simple way to explore the key features of your mobile computer. Features Demo contains applications that demonstrate scanning, document imaging, image capture, printing, and GPS functionality. Many of the applications that are part of Features Demo also have separate full-featured versions that you can download and license for your computer.

## About Intermec Launcher

Intermec Launcher 2.0 is a Microsoft Windows application, designed for Intermec mobile computers, that provides a platform from which other applications may be launched while attempting to provide a locked-down environment. You can configure Intermec Launcher for your specific application requirements. You can download and use Intermec Launcher for a 60-day evaluation period. After the evaluation period expires, you need to purchase a license.

## About Intermec Browser

Intermec Browser is a locked-down web application for your computer that is compatible with Microsoft Internet Explorer. You can configure Intermec Browser for your specific application requirements and design your own web pages. You can download and use Intermec Browser for a 60-day evaluation period. After the evaluation period expires, you need to purchase a license.

## About Intermec Connection Manager

Intermec Connection Manager is a software application and API interface that provides seamless network roaming for Intermec mobile computers configured with one or more wired or wireless technologies (Ethernet, 802.11, GPRS, CDMA). Intermec Connection Manager works in the background to automatically establish and maintain connections. You can download and use Intermec Connection Manager for a 60-day evaluation period. After the evaluation period expires, you need to purchase a license.

## About Intermec Terminal Emulator

The Intermec Terminal Emulator (ITE) application allows your Intermec computer to emulate 3270, 5250, and VT/ANSI terminals. ITE is available as part of the Intermec Client Pack (ICP).

**Note:** By default, while ITE is running, the phone is disabled. You can enable the phone by modifying the **Allow Phone Operations** ITE setting in Intermec Settings.

## About SIP Designer

The Soft Input Panel (SIP) Designer application lets you create and download custom SIP keyboards to your mobile computer.

# 3

# Using the Phone

You can use the cell phone to send and receive telephone calls, as well as transmit data through cellular wide-area networks (WANs).

# About the Phone

The mobile computer supports UMTS cellular phone technology. Phone features on the computer include a speaker, microphone, and speakerphone. You can also use a Bluetooth headset or hands-free kit.

After you turn on the phone and activate service with your wireless carrier, you can customize the phone features and network settings. For more information, see the online help on your mobile computer.

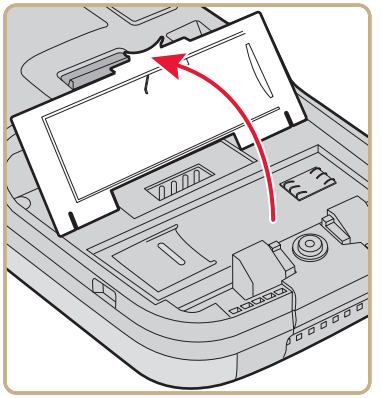
# Activating the UMTS Phone

You use a SIM card to activate the UMTS and GSM/EDGE radio module in your computer. You can purchase the SIM card from your network provider.

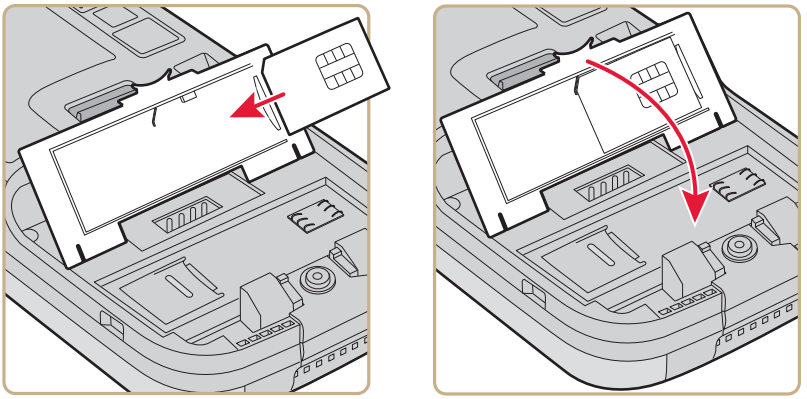
**Note:** The computer resets when you remove the battery.

To install the SIM card and activate the UMTS phone:

1. Tap **Start > Shutdown** to turn off the computer.
2. Push the battery release tab forward until the battery releases, and lift the battery away from the computer.
3. Open the card access door.



4 Place the SIM card into the slot in the card access door.



5 Close the card access door and install the battery.

6 Press the **Power** button. The CS40 cold boots.

# Turning the Phone On and Off

Before you can start using your phone, you need to enable it. You can use Wireless Center to enable and disable your phone, as well Bluetooth and Wi-Fi communications.

To turn on the phone using Wireless Center:

1 Tap **Start > Settings > Connections > Wireless Center**.

2 Tap **Phone**.

# Making a Phone Call

After you activate your phone, you are ready to start making phone calls.

To make a phone call:

1 Tap the green phone key.

Or, tap **Start > Phone**.

2 Tap the keys to enter the telephone number you want to call.

3 Tap the **Talk** button.

# Making an Emergency Phone Call

If the SIM card is not installed, the phone indicates that you have no service. However, you can make an emergency phone call even if the SIM card is missing.

To make an emergency phone call:

1. Tap **Start > Phone**.
2. Dial an emergency number, such as 112, 911, 000, 08, 118, 119, or 999.
3. Tap **Talk**.

   The call goes through to the appropriate emergency service.

# 4

# Using the Imager

You can use the imager to read bar codes and capture signatures. You can also configure the imager to meet your specific data collection and environmental needs.

# Reading Bar Codes

Use the imager to scan 1D and 2D bar code symbologies, composite symbologies, and postal codes. You can position the computer in almost any orientation to scan a bar code label.

**Note:** When the Pictures & Videos application is running, you cannot use the imager.

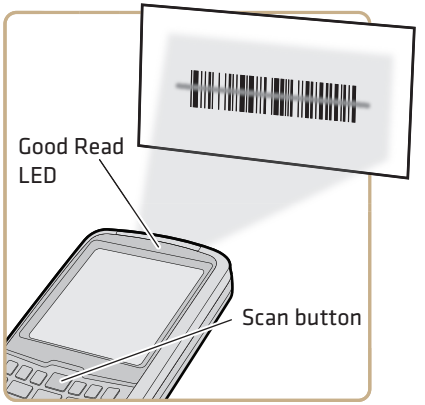
To read a bar code:

1. Enable only the bar code symbologies that you need.
2. (Optional) Use Intermec Settings to choose the predefined imager mode that best suits your environment:

| Predefined Mode | For Scanning |
|---|---|
| 1D | Only 1D labels. |
| 1D and 2D Standard | (Default) All types of bar code labels. |
| 1D and 2D Bright Environment | In high ambient light, such as outdoors in the sunshine. |
| 1D and 2D Reflective Surface | Glossy labels. |
| Custom | In conditions that require customized settings. For complete information about these settings, commands, and parameters, see the ***Intermec Settings Command Reference Manual***. |

3. Point the imager window at the bar code label, and hold the computer steady a few inches from the label.

4 Press the **Scan** button. The scanning beam and illumination area appear.




5 Use the scanning beam as a guide and aim toward the middle of the bar code.

When the computer successfully reads a bar code label, you hear a high beep, and the Good Read LED turns on briefly.

6 Release the **Scan** button.

# Capturing Images

The Image Capture application on your mobile computer can capture high-resolution grayscale images.

To capture an image:

1 Tap **Start > Programs > Image Capture**.

The Image Capture main screen shows streaming video from the imager.

2 (Optional) Adjust the Contrast slider for the best image:

- For brightly lit environments, move the slider to the right.
- For dark areas, move the slider to the left.

**Note:** For best results, move the slider a little at a time until you see a change in the onscreen image.

3. Point the mobile computer at the subject for the image and press **Enter**. The image appears.
4. View your image:
   - Tap-and-drag to scroll the image.
   - Zoom in (plus sign) or zoom out (minus sign).
5. Save (check mark) or discard (X) the image. The main screen appears, and you are ready to capture another image.

**Note:** By default, images are saved in the format Image_$<*image_number*> to the My Documents\ImageCapture directory.

6. (Optional) View your saved images by tapping **Options > Gallery**:
   - Tap the left arrow and the right arrow to view the images.
   - Zoom in (plus sign) or zoom out (minus sign).
   - Discard (X) an image.
   - Tap **Options > Delete All Files** to delete all saved images.

# Configuring the Image Capture Application

The default Image Capture settings apply to most situations where the ambient lighting is adequate for office work. However, you may need to change these settings depending on where you want to capture images, such as outdoors in bright sunlight or inside a darkened warehouse.

To configure image capture settings:

1. Tap **Options > Settings**.
2. Change settings to suit your environment:

### *Image Capture Settings*

| Setting | Description |
|---|---|
| Edge Enhancement | Adjusts contrast to enhance the edges of objects. Too high a setting for the environment adds noise to the image. (Default = Medium) |

| Setting | Description |
|---|---|
| Lighting Correction | Corrects for inconsistent lighting. For example, if the edges of the image are much darker than the center, this feature lightens the edges to match the center. (Default = Disabled) |
| Noise Reduction | Reduces noise (from 0 to 9) resulting from edge enhancement. Too high a value can cause banding. (Default = 9) |
| Subsampling | Sets the resolution of the image by choosing a ratio from 1:2 to 1:8. A ratio of 1:4 means that the processed image will contain 1 pixel for every 4 pixels in the original image. The lower the ratio, the larger and more detailed the image. (Default = None) |
| Rotation | Rotates the processed image clockwise in 90° increments. (Default = 0, no rotation) |
| File Format | Sets the file type (BMP or JPEG) for saved images. (Default = JPEG) |
| Compression Quality | Sets JPEG compression quality from 0% to 100%. (Default = 60) |

3 Tap **Options** and choose **Save Changes and Exit** or **Discard Changes and Exit**.

# How to Integrate Image Capture

You can integrate Image Capture into your own application by calling it from your application. You can also customize Image Capture settings by creating and editing the Image Capture configuration .xml file.

## How to Call Image Capture From Your Application

To integrate Image Capture features into your existing mobile application, you need to specify two parameters:

- Path to and name of the Image Capture application. The default setting is "\\Program Files\\Intermec\\ImageCapture\\ImageCapture.exe".
- Path to and name of the .xml configuration file that Image Capture should use when called by your application. You can use a custom .xml configuration file based on your needs. If no .xml file is

specified, Image Capture uses its default settings or looks for an .xml file in its local directory.

This sample code calls Image Capture from its default location and specifies "ImageCapture_Config.xml" as the custom .xml configuration file to use:

```
try
{
System.Diagnostics.Process.Start("\\ProgramFiles\\ImageCapture
\\ImageCapture.exe","\"\\Program Files\\MyApp\\ImageCapture_
Config.xml\"");
}

catch (Exception exception)

{
MessageBox.Show("Failed to execute \\ProgramFiles\\ImageCapture
\\ImageCapture.exe" + "\r\n" + exception.ToString());
}
```

## About the Image Capture XML File

To further customize Image Capture features for use in your application, you can create or edit the Image Capture .xml file and modify these fields:

### *Image Capture XML File Fields*

| Field Name | Valid Values | Description |
|---|---|---|
| Settings | | |
| allowChanges | True or false | Default is true. When set to false, user cannot change any settings. |
| allowGallery | True or false | Default is true. When set to false, user cannot go to the Gallery screen. |
| Conditioning Settings | | |
| allowChanges | True or false | Default is true. When set to false, user cannot change settings in the Conditioning tab. |
| Edge Enhancement | | |
| allowChanges | True or false | Default is true. When set to false, user cannot change the edge enhancement setting. |
| edgeEnhancement | None, low, medium, or high | Default is None. If no value is provided, the edge enhancement value is unchanged. |

| Field Name | Valid Values | Description |
|---|---|---|
| Lighting Correction | | |
| allowChanges | True or false | Default is true. When set to false, user cannot change the lighting correction setting. |
| lightingCorrection | True or false | Default is true. If no value is provided, the application cannot change the lighting correction value. |
| Noise Reduction | | |
| allowChanges | True or false | Default is true. When set to false, user cannot change the noise reduction setting. |
| noiseReduction | 0 to 9 | Default is no value. If no value is provided, the application does not change the noise reduction setting. |
| Image Rotation | | |
| allowChanges | True or false | Default is true. When set to false, user cannot change the rotation setting. |
| imageRotation | None, 90, 180, 270 | Default is no value. If no value is provided, the application does not change the rotation value. |
| Subsampling | | |
| allowChanges | True or false | Default is true. When set to false, user cannot change the subsampling rate. |
| subSampling | None, 1:2, 1:3, 1:4, 1:5, 1:6, 1:7, 1:8 | Default is no value. If no value is provided, the application does not change the subsampling rate. |
| Storage Settings | | |
| allowChanges | True or false | Default is false. If set to true, user can change settings in the Storage tab. |
| Image Location | | |
| allowChanges | True or false | Default is false. If set to true, user can change the directory where saved images are stored. |
| imageLocation | File path | Default is no value. If no value is provided, the application does not change the directory where saved images are stored (My Documents\ ImageCapture). |
| File Name | | |
| allowChanges | True or false | Default is false. When set to true, user can change the filename template setting. |

| Field Name | Valid Values | Description |
|---|---|---|
| fileName | String of up to 200 characters | Name to be used for saved image files. If the name is identical to a file already saved, Image Capture adds a numeric character to the end of the file name. |
| Output Compression | | |
| allowChanges | True or false | Default is false. When set to true, user can change the file format type. |
| fileFormat | BMP, JPEG | Default is no value. If no value is provided, Image Capture does not change the file format setting. If no format is selected, the file is saved as a .bmp. |
| Compression Quality | | |
| allowChanges | True or false | Default is false. When set to true, user can change the compression quality setting. |
| compressionQuality | 0% to 100% | Default is no value. If no value is provided, the application does not change the compression quality setting. The higher the value, the better the quality, and the larger the file size will be. If fileFormat is set to BMP, this setting is not used. |

This XML example demonstrates how to use the fields as defined in the previous section.

```
<?xml version="1.0" encoding="utf-8" ?>
<ImageCapture xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
<Settings allowChanges ="true" allowGallery="true">
   <Conditioning allowChanges="true">
<edgeEnhancement allowChanges="true">None</edgeEnhancement>
<lightingCorrection allowChanges="true">Enabled</lightingCorrection>
<noiseReduction allowChanges="true">0</noiseReduction>
<imageRotation allowChanges="true">90</imageRotation>
<subsampling allowChanges="true">None</subsampling>
   </Conditioning>
   <Storage allowChanges="true">
<imageLocation allowChanges="false">\My Documents\ImageCapture
</imageLocation>
<fileName allowChanges="false">
Image_$(num)</fileName>
    </Storage>
</Settings>
</ImageCapture>
```

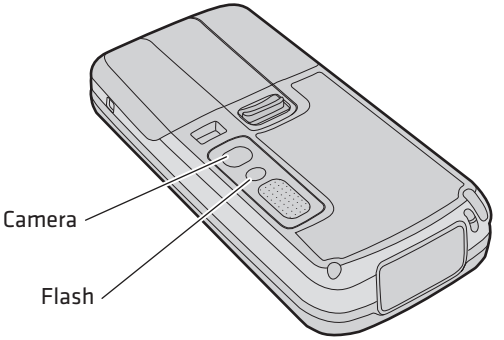
# 5
# Using the Camera

You can use the color camera to take pictures and record videos.

# About the Color Camera

The camera and flash are located on the back of the CS40.

***Location of the CS40 Camera***




You run the Pictures & Videos application to access the camera features. In this application, you can:

- take, view, and edit pictures.
- record and launch video clips stored on the CS40 or a microSD card.
- configure camera options.

You can also send pictures and video clips to others or save an image as the background on the Today screen.

**Note:** While the Pictures & Videos application is running, you cannot use the imager.

## Taking a Picture

You can take photos in high, normal, or low quality, with image sizes up to 2048 x 1536 pixels. When you take a picture, the image is saved as a .jpg file and stored in the /My Documents/My Pictures folder.

To take a picture:

1. Tap **Start > Pictures & Videos**.
2. Tap the **Camera** icon in the grid or the **Camera** button on the Tile bar, or press **Enter**.

3. Using the screen as a viewfinder, move the camera until you have the image you want to take a picture of.

   Press ⌃ to zoom in, or press ⌄ to zoom out.

4. Tap **Take Pic** on the Tile bar or press **Enter** to take and save the picture. If you choose to save your pictures to main memory, they are saved to permanent storage on your mobile computer.

## Recording a Video

You need to switch to video mode to record video. When you record video, the video is saved as an .mp4 file and stored in the /My Documents/My Pictures folder.

To switch to Video mode and record video:

1. Tap **Start > Pictures & Videos**.
2. Tap the **Camera** icon in the grid or the **Camera** button on the Tile bar, or press **Enter**.
3. Tap **Menu > Video**.

   In the lower right, the camera icon turns into a video camera. On the Tile bar, the **Record** button replaces the **Take Pic** button.
4. Using the screen as a viewfinder, move the video camera until you see the scene you want to video record.

   Press ⌃ to zoom in, or press ⌄ to zoom out.
5. Tap **Record** on the Tile bar or press **Enter** to start recording.
6. When you are done, tap **Stop** or press **Enter** to stop recording and save the video.

   If you choose to save your videos to main memory, they are saved to permanent storage on the CS40.

# Saving Pictures and Videos to an SD Card

Pictures and videos are automatically saved to the main memory on your CS40. You can change the default location to an SD card to easily transport them to another device.

To save picture and video files to an SD card:

1. Install a microSD card. For help, see **"Inserting a microSD Card" on page 14**.
2. Tap **Start** > **Pictures & Videos**.
3. Tap the **Camera** icon.
4. Tap **Menu > Settings**.
5. From the **Save file to** list, select **SD card**, and tap **OK**.

# 6
# Using GPS

The CS40 comes equipped with an integrated Global Positioning System (GPS) receiver. It can deliver standards-based National Marine Electronics Association (NMEA) data strings to GPS applications.

# About the Integrated GPS on Your Computer

Intermec recommends that you use the GPS Intermediate Driver (GPSID) instead of directly accessing the GPS hardware. The GPSID is a Microsoft software component that interacts between applications and the GPS hardware. The GPSID supports Extended Ephemeris, which enhances GPS performance by:

- reducing the amount of time it takes your GPS receiver to acquire a fix.
- eliminating the need to obtain precise satellite data information from the GPS satellites.

As a Microsoft software component, the GPSID also:

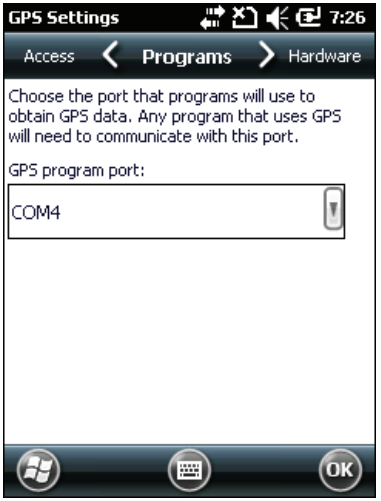
- allows multiple applications to simultaneously access the GPS data stream.
- provides access to GPS data without requiring applications to recognize and parse NMEA syntax.

# Using the GPSID Installed on the Computer

To use the GPSID installed on your mobile computer, you need to configure the GPSID settings.

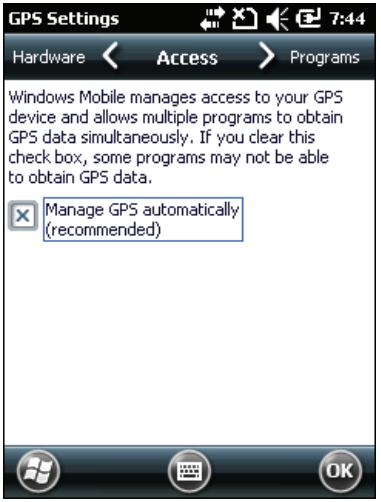
To configure your GPSID settings:

1 Tap **Start > Settings > System > External GPS**. The GPS Settings screen appears with **Programs** selected.




2 Select the COM port that you want your programs to use to get GPS data from your mobile computer.

3 Tap **Access** and select the **Manage GPS automatically** check box.




4 Tap **OK**.

# Improving GPS Performance on the Computer

Use the iGPS application to improve the performance of the GPS on your computer. The integrated GPS module has three operating modes.

### *Integrated GPS Operating Modes*

| Operating Mode | Description |
|---|---|
| Standalone | In Standalone mode, the GPS module relies solely on GPS satellites to determine position. |
| MS Assisted | In MS Assisted mode, the computer can determine position without receiving GPS signals directly from satellites; instead, the computer receives GPS signals and information provided by the cellular network. Even when the computer can receive a satellite signal, MS Assisted can improve position accuracy and reduce the time to determine initial position (Time-To-First-Fix). Check with your cell phone carrier for availability and pricing for MS Assisted service. |
| gpsOneXTRA™ | Qualcomm's gpsOneXTRA Assistance technology provides enhanced operation for Standalone GPS. This option enables the UMTS-enabled computer to automatically download a small assistance data file from the XTRA servers through a brief internet access session. |

Another option you can configure with iGPS is the fix interval. The fix interval defines how often the GPS should provide new information. Larger intervals use less power, but many applications require small intervals to work correctly. The default for fix interval is 4.

**Note:** Anytime you change the GPS settings, the phone module automatically resets. This reset does not affect the functionality of the computer.

To improve GPS performance using iGPS:

1. Go to **Start > Settings > System > iGPS**.
2. In the **Fix Interval** field, enter a value for the fix interval. The default setting is 4 and should be optimized for most applications.

3. Select **Fix Type** and select **Standalone (1)**, **MS assisted (2)**, or **Enable gpsOneXTRA**.
4. Tap **OK**.

# 7

# Configuring the Computer

Use this chapter to learn about the available methods for configuring your mobile computer and how to use Intermec Settings. You can also use this chapter to learn how to configure network communications and wireless security.

# How to Configure the Computer

You can configure many parameters on the computer such as the bar code symbologies it decodes or the network settings. The values you set for these parameters determine how the computer operates.

There are several ways to configure the computer:

- Directly on the computer. You can use Intermec Settings directly on the computer to change only the settings on that computer. For more information, see **"Using Intermec Settings On the Computer" on page 54**.
- Remotely using Intermec SmartSystems Foundation. When you use SmartSystems, you can remotely configure all your CS40 mobile computers as well as other SmartSystems-enabled Intermec computers and peripherals. For more information, see **"Using Intermec Settings Remotely With SmartSystems Foundation" on page 61**.
- You can use a third-party device management product that supports the computer and Intermec Settings, such as Soti MobiControl or Wavelink Avalanche. For more information, visit the **Device Management** page on the Intermec web site.
- You can use imager configuration bar codes to enable or disable symbologies, reset to factory defaults, and set predefined imager modes. For more information, see **"Imager Configuration Bar Codes" on page 125**.

You can also configure the computer with configuration bundles that you create using SmartSystems Foundation. For more information, see the SmartSystems Foundation Online Help.

# Using Intermec Settings On the Computer

Use Intermec Settings to configure parameters for Intermec applications on the computer, as well as device-specific parameters like volume. You can configure parameters for important functions like data collection and communications.

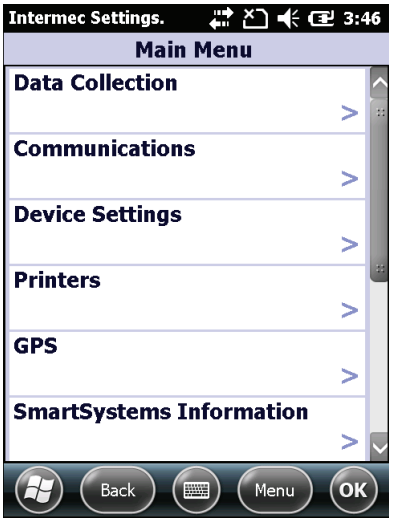
## Starting Intermec Settings

Intermec Settings is located on the Windows Mobile 6.5 System screen.

To start Intermec Settings:

- Tap **Start > Settings > System > Intermec Settings**.

  The Intermec Settings Main Menu appears.




## About the Structure of Intermec Settings

Use the tables below to help find the parameters you want to configure. The tables are organized to reflect the structure of the Intermec Settings Main Menu.

If you see **>** next to a menu option, there are more screens available in the next level. If you see **...** next to a menu option, there is only one more screen available.

Most parameters are saved as soon as you tap **OK**. Some settings, such as the Serial Port Switch require you to reboot the computer for the changes to take effect.

### Data Collection Menu

| Data Collection Options | Parameters You Can Configure |
|---|---|
| Internal Scanner | • Enable scanner port<br>• Symbologies<br>• Symbology Options<br>• Scanner Settings<br>• Imager Settings<br>• Decode Security |
| BT-Configure on Connect | BT-Configure on Connect |

### Communications Menu

| Communications Options | Parameters You Can Configure |
|---|---|
| Device Name | Device name |
| 802.11 Radio | • Security Choice<br>• Allow Security Changes<br>• IP Settings<br>• Certificates<br>• Radio Enabled |
| Ethernet Adapter | IP Settings |
| Bluetooth | Bluetooth settings (Power, Discoverable, Connectable, and so on) |
| WWAN Radio | • Add New WWAN Connection<br>• Edit WWAN Connections<br>• Manage WWAN Radio State<br>• WWAN Information |

### Device Settings Menu

| Device Settings Options | Parameters You Can Configure |
|---|---|
| Date and Time | Date and time settings |
| Good Read | • Internal Scanner<br>• Bluetooth Scanner |
| Volume | • Beeper and Voice<br>• Headset Beeper |
| Screen | • Backlight - Battery Power<br>• Backlight - External Power |

| Device Settings Options | Parameters You Can Configure |
|---|---|
| Keypad | Backlight Timeout |
| Power Management | • Battery Power<br>• External Power |
| System Component Versions | System component versions (read-only) |
| IDL Runtime Versions | ITC50 (read-only) |
| Profiles | • Camera<br>• Power<br>• Scanning |
| Features Disabled by Policy | None (read-only) |

### *Printers Menu*

| Printers Options | Parameters You Can Configure |
|---|---|
| Printer | Printer settings (Auto Detect Printer, Memory, Display, and so on) |

**Note:** The Printer menu displays the settings for the Bluetooth printer that is connected to the computer.

### *GPS Menu*

| GPS Options | Parameters You Can Configure |
|---|---|
| Bread Crumbing | Bread crumbing settings |

### *SmartSystems Information Menu*

| SmartSystems Information Options | Parameters You Can Configure |
|---|---|
| Identity | Identity information (Hardware Version, Firmware Version, OS Version, and so on) (read-only) |
| Administrator | Administrator settings (Name, Phone, and Email) |
| Location | Location settings (Country, State, City, Campus, and Detail) |
| Information | Device Notes (read-only) |

### Device Monitor Menu

| Device Monitor Options | Parameters You Can Configure |
|---|---|
| Device Health Controls | • Enable Health Data Collection<br>• Set Rule File Location<br>• Set Data Refresh Periods |
| Disabled Executables | None (read-only) |
| Device Wipe | • Enable Wipe<br>• Interval |

### Core Messaging Service Menu

| Core Messaging Service Options | Parameters You Can Configure |
|---|---|
| Server IP | Server IP (read-only) |
| Associated Server IP | Associated Server IP |
| Broadcast Name | Broadcast Name |
| Port | Port (read-only) |
| Keep Alive Ping Interval | Keep Alive Ping Interval |

### License Manager Menu

| License Manager Options | Parameters You Can Configure |
|---|---|
| About | About Settings (read-only) |
| License Vault | None (displays applications that are licensed) |

### Virtual Wedge Menu

| Virtual Wedge Options | Parameters You Can Configure |
|---|---|
| Enable Virtual Wedge | Enable Virtual Wedge |
| Bar Code Scanner Wedge | • Bar Code Scanner Grid<br>• Label Encoding |
| Magstripe Reader Wedge | Magstripe Reader Grid |

***Location Services Menu***

| Location Services Options | Parameters You Can Configure |
|---|---|
| Server | • Port<br>• Enable Server |
| Virtual GPS | Virtual GPS settings |

For more information on all parameters in Intermec Settings, see the *Intermec Settings Command Reference Manual*.

## How to Navigate in Intermec Settings

You can easily navigate through the screens in Intermec Settings to find the parameter you need to configure.

To move down a level in Intermec Settings:

- Tap the menu item in the list.

To move back a level in Intermec Settings:

- Tap **Back** or **Cancel** on the Tile bar.

To save a parameter setting:

- Tap **OK**.

To exit Intermec Settings:

- Tap **Menu** > **Exit** or **OK**.

## Configuring Profile Settings With Intermec Settings

A profile is a set of predefined values that you can apply to the computer to ensure optimal performance in a specific situation or environment. The Profile Settings application is available from the Start menu, so the end user can easily configure the computer.

Use Intermec Settings to determine which profiles you want available to the end user in the Profile Settings application.

To configure profile settings available to an end user:

1. Go to **Device Settings > Profiles**.
2. Select **Camera**, **Power**, or **Scanning**.

3. From the Camera, Power, or Scanning submenu, check or clear the **Display** check box for the settings you want available to the end user.
4. Tap **OK** to save your selection.

## Restoring Default Settings

You can restore default settings for an individual menu or for all Intermec Settings parameters.

To restore default settings for an individual menu:

1. Navigate to the menu you want to restore to defaults.
2. Tap **Menu > Restore Menu Defaults**.
3. When prompted, tap **Yes** to restore the menu default settings.
4. If prompted to refresh the computer, tap **Yes**.

To restore defaults settings for all parameters:

1. Tap **Menu > Restore All Defaults**.
2. Tap **Yes**.
3. After several minutes, all of the default settings are restored.

## How to Hide Menu Items in Intermec Settings

If you do not want menu items available to other users, you can hide them. Hidden items are not saved when you back up your settings in the SmartSystems Foundation Console.

To hide menu items:

1. Tap and hold the item, and then choose **Hide Menu Item** from the popup list.
2. When asked if you want to hide the menu, tap **Yes**.

To restore hidden items in a single menu:

- Tap and hold the menu bar where the item was hidden, and then choose **Restore Item Default** from the popup list.

To restore all hidden items in all menus:

- Tap **Menu > Unhide All Items**.

**Note:** When you restore default settings in Intermec Settings, only the settings for visible items are restored to defaults. The settings for hidden menu items are not affected.

# Using Intermec Settings Remotely With SmartSystems Foundation

Your mobile computer is SmartSystems-enabled, which lets you open Intermec Settings from the SmartSystems console to remotely configure all of your mobile computers. For more information on SmartSystems, see **"How to Manage the Computer Using SmartSystems" on page 84**.

To open Intermec Settings from the SmartSystems Foundation Console:

1. In the SmartSystems Foundation Console, right-click a mobile computer.
2. From the menu, select **Intermec Settings**.
3. Configure the settings you need to change.

   As you choose parameters from the tree structure, help for each parameter appears in the upper right pane of Intermec Settings.
4. When you are done making changes, choose **File > Save**.

   For help using Intermec Settings, click **Help > Contents**. For more information on all parameters in Intermec Settings, see the ***Intermec Settings Command Reference Manual***.

# About Network Communications

You can easily add your mobile computer to your wireless or wired data collection network. You can connect your mobile computer using:

- Wi-Fi (802.11b/g radio) communications.
- Bluetooth communications.
- USB and serial communications.

# About Wi-Fi (802.11b/g Radio) Communications

To add your mobile computer to your Wi-Fi network so you can transfer data wirelessly, you need to enable the Wi-Fi radio and configure radio parameters. You can use:

- Intermec Settings to enable the Wi-Fi radio. For help, see the next section, **"Enabling the Wi-Fi Radio With Intermec Settings."**
- ScanNGo bar codes to enable the 802.11 radio and configure the default settings for Funk security or Microsoft Wireless Zero Configuration (WZC) security. For help, see **"Enabling the Wi-Fi Radio With ScanNGo Bar Codes" on page 63**.

**Make sure all components with antennas are at least 30 cm (1 ft) apart when power is applied. Failure to comply could result in equipment damage.**

## Enabling the Wi-Fi Radio With Intermec Settings

By default, the Wi-Fi radio is disabled. You need to enable the radio to add your mobile computer to your Wi-Fi network.

To enable the Wi-Fi radio with Intermec Settings:

1. Start Intermec Settings by tapping **Start > Settings > System > Intermec Settings**.
2. Tap **Communications > 802.11 Radio > Radio Enabled**.
3. Select the **Radio Enabled** check box and tap **OK**.

   By default, the computer selects Funk security and enables DHCP.
4. Use Intermec Settings to configure the parameters you need to communicate with your network.
5. Configure Wi-Fi security. For help, see **"About Wireless Security" on page 70**.

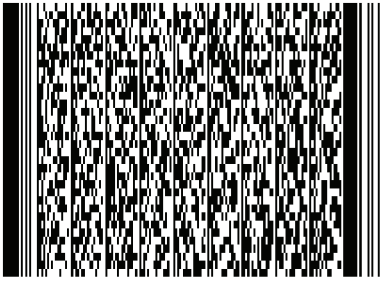
## Enabling the Wi-Fi Radio With ScanNGo Bar Codes

Use ScanNGo bar codes to enable the 802.11 radio and configure the default settings for Funk security or Microsoft WZC security.

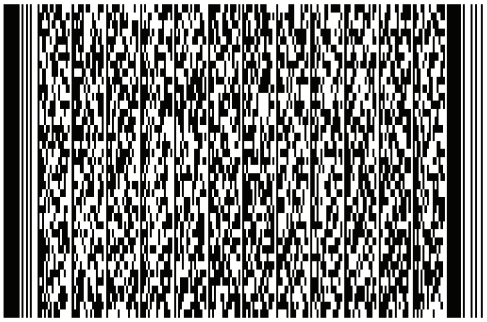
To enable the Wi-Fi radio with ScanNGo bar codes:

- Scan one of these bar codes.

  Enable Wi-Fi and configure Funk security default settings.



  Enable Wi-Fi and configure Microsoft WZC security default settings.



  The ScanNGo application starts, enables the radio, and configures the default security settings. If you want to change the security settings from their default values, see **"About Wireless Security" on page 70**.

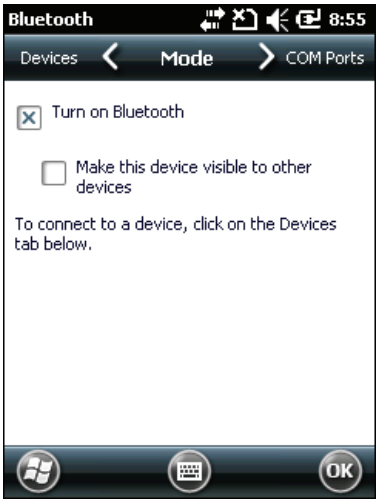
# Configuring Bluetooth Communications

Your mobile computer is Bluetooth™-enabled, which lets you connect to other Bluetooth devices, such as scanners, printers, or audio devices.

You need to turn on the Bluetooth radio before you can discover and connect to other Bluetooth devices.

To turn on the Bluetooth radio and configure Bluetooth settings:

1. Tap **Start > Settings > Bluetooth > Mode**.
2. Select the **Turn on Bluetooth** check box.




3. (Optional) If you want your mobile computer to be visible to other Bluetooth devices, choose **Make this device visible to other devices**.
4. Tap **OK**.

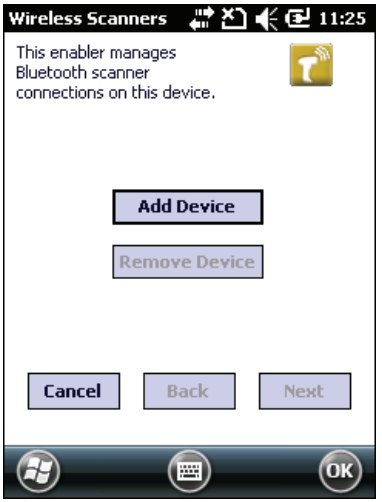
   The Bluetooth radio maintains its state through a warm or cold boot and maintains virtual COM ports. But, if you clean boot your mobile computer you need to recreate pairings to devices.

## Connecting to a Bluetooth Scanner

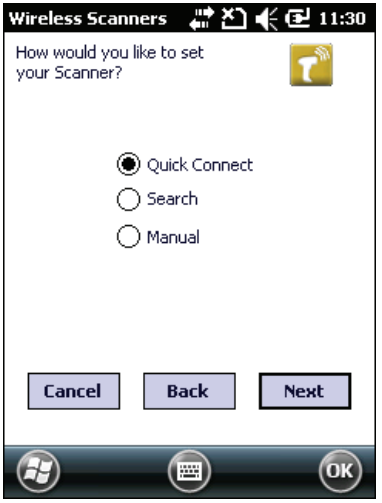
You can connect to an Intermec Bluetooth scanner, such as the SF51.

To connect to an Intermec Bluetooth scanner:

1 Tap **Start > Settings > System > Wireless Scanning**.




2 Tap **Add Device**.




3 Select **Quick Connect**, **Search**, or **Manual**. Follow the onscreen instruction to add a wireless scanner.

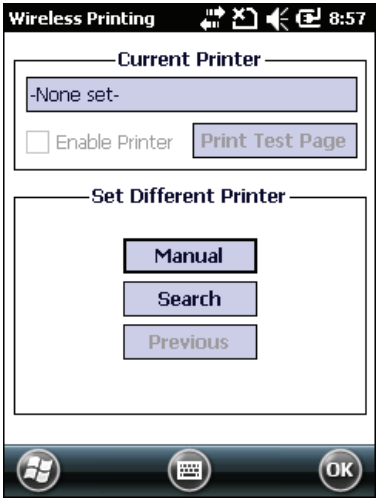
## Connecting to a Bluetooth Printer

To configure your mobile computer for Bluetooth wireless printing, you need to:

- create an application that opens the wireless printing COM port on your mobile computer. For help, see the Bluetooth Resource Kit, which is part of the Intermec Developer Library (IDL), available from the Intermec web site at **www.intermec.com/idl**.
- select the current wireless printer on your mobile computer. For help, see the next procedure.

To select the current wireless printer:

1 Tap **Start > Settings > System > Wireless Printing**.




2 Tap **Search** to find a printer, or tap **Manual** to enter a device address. Follow the onscreen instructions to select the current wireless printer.

3 (Optional) Tap **Print Test Page**. The printer prints out a test page.

After you configure Bluetooth wireless printing, you can use an application that opens the wireless printing COM port on your mobile computer. For help developing applications, see the Bluetooth Resource Kit, part of the Intermec Developer Library (IDL), available from the Intermec web site at **www.intermec.com/idl**.

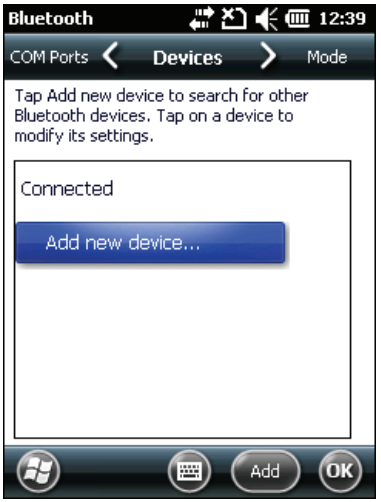
**Note:** You can also print wirelessly using Microsoft APIs with Bluetooth extensions for Winsock and Bluetooth virtual COM ports. For help, see the Bluetooth Resource Kit documentation.

### Connecting to a Bluetooth Audio Device

Use the Bluetooth Audio enabler to discover, activate, and connect to a Bluetooth audio device, such as a headset.

To connect to a Bluetooth audio device:

1. Tap **Start > Settings > Bluetooth**.
2. From the horizontal scroll at the top of the page, select **Devices**.




3. Follow the onscreen instructions to connect to a Bluetooth audio device.

## About USB Communications

You can use the power and data y-cable accessory with your CS40 to transmit data to and receive data from a desktop PC through USB communications. The USB port supports both USB client and USB host. The port automatically senses the cable you are using and determines which drivers to use. For more information about this accessory, see **"CS40 Accessories" on page 4**.

# Creating an ISP Connection

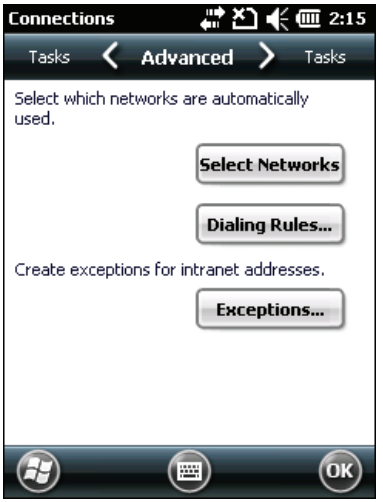
You can create an Internet Service Provider (ISP) connection to send and receive e-mail messages using Messaging (Outlook E-mail) and view web pages using Internet Explorer Mobile. You need to get your ISP dial-up access telephone number, a user name, and a password from your ISP.

To create an ISP Connection:

1. Tap **Start > Settings > Connections > Connections**. (Yes, you need to tap Connections twice.)
2. Under **My ISP**, tap **Add a new modem connection**.
3. Enter a name for the connection, such as "ISP Connection."
4. If you are using an external modem connected to your mobile computer with a cable, select **Hayes Compatible on COM1** from the **Select a modem** list.

   If you are using a WAN data connection, select **Cellular Line (GPRS)**.
5. Tap **Next**.
6. Enter the access phone number and then tap **Next**.
7. Enter the **User name**, **Password**, and **Domain** (if provided by an ISP or your network administrator).
8. Tap **Finish**.

9 On the Connections screen, tap **Advanced** on the horizontal scroll.




10 Tap **Dialing Rules**.

11 When the Enable Dialing Rules box appears, tap **OK**.

12 Tap **Edit**.

13 In the **Name** field, enter your phone type (**Home**, **Mobile**, or **Work**).

14 Tap **OK** until you exit the Connections screen.

## Creating a VPN Server Connection

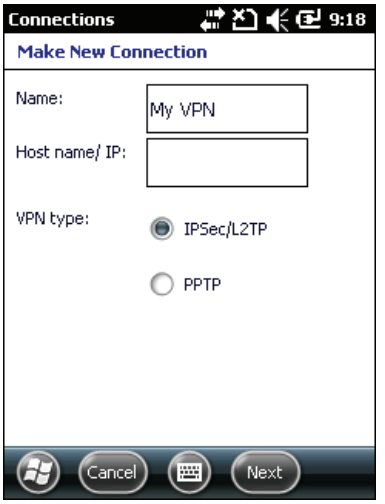
You can create a Virtual Private Network (VPN) connection to securely connect to servers, such as a corporate network, through the Internet. Before you can create a VPN connection, you need this information from your network administrator:

- User name
- Password
- Domain name
- TCP/IP settings
- Host name or IP address of the VPN server

To create a VPN server connection:

1 Tap **Start > Settings > Connections > Connections**. (Yes, you need to tap Connections twice.)

2 Under **My Work Network**, tap **Add a new VPN server connection**.




3 Step through the screens to set up your VPN connection.

# About Wireless Security

Your mobile computer provides four types of security for your wireless network:

- Wi-Fi Protected Access 2 (WPA2™)
- Wi-Fi Protected Access (WPA)
- 802.1x
- WEP

This section explains how to configure wireless security on your mobile computer. Intermec recommends that you implement WPA2 security using PSK (Personal) or 802.1X (Enterprise) key management.

You need to use either Funk or Microsoft security to implement your security solution. For details, see the next section, **"How to Choose Between Microsoft and Funk Security" on page 71**.

If you are using WPA-802.1x, WPA2-802.1x, or 802.1x security, make sure that your authentication server and authenticators are properly configured.

**Note:** Your security choice does not depend on your authentication server. For example, you can choose Funk security if you use Microsoft Active Directory® to issue certificates.

## How to Choose Between Microsoft and Funk Security

The computer supports both Funk and Microsoft security, which dynamically selects wireless networks based on your preferences. The option you choose depends on your network security needs:

- If you are using the computer in a static environment that requires a high level of security, you should use Funk security, which offers CCX v4.0 compliance, support for LEAP and TTLS, and configuration for up to four profiles.

  To use Funk security, you need to select a profile. For help, see the next section.

- If you are primarily using the mobile computer to connect to Wi-Fi hotspots, you may want to use Microsoft security.

  To use Microsoft security, you need to select it as your security choice. For help, see **"About Microsoft Security" on page 76**.

### About Funk Security

You can define up to four profiles for Funk security. Different profiles let your mobile computer communicate in different networks without having to change security settings. For example, you may want to set up one profile for the manufacturing floor and one for the warehouse. By default, the active profile is Profile 1.

### Selecting a Funk Security Profile

You can define up to four Funk security profiles.

To select a Funk security profile:

1. Start Intermec Settings.
2. Choose **Communications > 802.11 Radio > Funk Security**.
3. Choose a profile. A list of configurable settings appears.
4. (Optional) In the **Profile Label** text box, enter a meaningful name for your profile.
5. Configure your security settings. For help, see the next sections.
6. Repeat Steps 3 through 5 for each profile you want to define.
7. Set an active profile by choosing it in the **Active Profile** list.
8. Save your settings.

### Configuring WPA or WPA2 Enterprise (802.1x) Security With Funk

After you configure the communications and radio parameters on your mobile computer and select Funk as your security choice, you can configure WPA-802.1x or WPA2-802.1x security.

To configure WPA-802.1x or WPA2-802.1x security with Funk:

1. Start Intermec Settings.
2. Choose **Communications > 802.11 Radio > Funk Security**.
3. Select the profile you want to configure.
4. For **Association**, choose **WPA** or **WPA2**. Encryption automatically defaults to **TKIP** or **AES**, respectively.
5. For **8021x**, choose **TTLS**, **PEAP**, **EAP-FAST**, or **TLS**.
6. If you choose **TTLS** or **PEAP**:
   a. For **Prompt for Credentials**, choose **Enter credentials now**.
   b. Enter a **User Name** and **User Password**.
   c. For **Validate Server Certificate**, choose **Yes**.

**Note:** The correct date must be set on your mobile computer when you enable **Validate Server Certificate**.

7 If you choose **TLS**:

   a Load a user and root certificate on your mobile computer. For help, see **"Loading a Certificate" on page 80**.

   b Enter a **User Name** and **Subject Name**.

   c For **Validate Server Certificate**, choose **Yes**.

   d (Optional) To increase your level of security, enter a **Server 1 Common name** and a **Server 2 Common name**.

### Configuring WPA or WPA2 Personal (PSK) Security With Funk

After you configure the communications and radio parameters on your mobile computer and select Funk as your security choice, you can configure WPA-PSK or WPA2-PSK security.

To configure WPA-PSK or WPA2-PSK security with Funk:

1 Start Intermec Settings.

2 Choose **Communications > 802.11 Radio > Funk Security**.

3 Select the profile you want to configure.

4 For **Association**, choose **WPA** or **WPA2**.

5 For **8021x**, choose **None**.

6 For **Pre-Shared Key**, enter the pre-shared key or passphrase.

   The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters. The value must match the key value on the access point. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the mobile computer internally converts it to a pre-shared key. This value must match the passphrase on the authenticator.

7 Save your settings.

## Configuring 802.1x Security With Funk

After you configure the communications and radio parameters on your mobile computer and select Funk as your security choice, you can configure 802.1x-WEP security with Funk. Intermec recommends that you use WPA2-802.1x instead of 802.1x-WEP if possible.

To configure 802.1x security with Funk:

1. Start Intermec Settings.
2. Choose **Communications > 802.11 Radio > Funk Security**.
3. Select the profile you want to configure.
4. For **Association**, choose **Open**.
5. For Encryption, choose **WEP**.
6. For **8021x**, choose **TTLS**, **PEAP**, or **TLS**.
7. If you chose **TTLS** or **PEAP**:
   a. Enter a **User Name**.
   b. For **Prompt for Credentials**, choose **Enter credentials now**.
   c. Enter a **User Password**.
   d. For **Validate Server Certificate**, choose **Yes**.
8. If you choose **TLS**:
   a. Load a user and root certificate on your mobile computer. For help, see **"Loading a Certificate" on page 80**.
   b. For **Validate Server Certificate**, choose **Yes**.
   c. Enter a **User Name** and **Subject Name**.
9. (Optional) To increase your level of security, enter a **Server 1 Common name** and a **Server 2 Common name**.
10. Save your settings.

## Configuring Static WEP Security With Funk

After you configure the communications and radio parameters on your mobile computer and select Funk as your security choice, you can configure static WEP security with Funk. Intermec recommends that you use WPA2-PSK instead of WEP if possible.

To configure static WEP security with Funk security:

1. Start Intermec Settings.
2. Choose **Communications > 802.11 Radio > Funk Security**.
3. Select the profile you want to configure.
4. For **Association**, choose **Open**.
5. For **Encryption**, choose **WEP**.
6. For **8021x** choose **None**.
7. Define a value for the keys you want to use. You can define up to four keys (**Key 1** through **Key 4**).

   Enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio. Set a 5- byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be preceded by 0x and contain 5 or 13 hex pairs.
8. For **Transmit key**, choose the key you want to use for transmitting data.
9. Save your settings.

## Using Open (No Security) Associations With Funk

You can configure your mobile computer for no security with Funk.

To configure Open security with Funk:

1. Start Intermec Settings.
2. Choose **Communications > 802.11 Radio > Funk Security**.
3. Select the active profile you are using.
4. For **Association**, choose **Open**.
5. For **Encryption**, choose **None**.
6. Tap **OK**. Your settings are saved.

## About Microsoft Security

With Microsoft Wireless Zero Configuration (WZC), you can configure:

- WPA
- 802.1x
- Static WEP

### Selecting Microsoft Security

The default security setting is Funk. If you want to use Microsoft Wireless Zero Configuration (WZC) security, you need to select it as your security choice. After you select Microsoft as your security choice, you are prompted to save your settings and reset your computer for the change to take effect.

To select Microsoft security:

1. Start Intermec Settings. For help, see **"Configuring the Computer" on page 53**.
2. Choose **Communications > 802.11 Radio > Security Choice**.
3. From the **Security Choice list**, select **Microsoft Security**. An alert box appears telling you that you must save your settings and warm boot the mobile computer for the new security choice to take effect.
4. Choose **Yes**. The computer resets and starts with Microsoft Security as the Security Choice.

### Configuring WPA or WPA2 Enterprise (802.1x) Security With Microsoft

After you configure the communications and radio parameters on your mobile computer and select Microsoft as your security choice, you can configure WPA or WPA2 Enterprise (802.1x) security with Microsoft.

To configure WPA or WPA2 Enterprise (802.1x) security with Microsoft:

1. Start Intermec Settings.
2. Choose **Communications > 802.11 Radio > Microsoft Security**.

3 For **Infrastructure Mode**, choose **Infrastructure**.

4 For **Network Authentication**, choose **WPA** or **WPA2**. Data Encryption automatically defaults to **TKIP**.

5 For **802.1x Authentication**, choose either **TLS**, or **PEAP**.

6 If you choose **TLS**:

   a Choose **Properties > Run App**. The Auth. Settings dialog box appears.

   b Choose **Select**.

   c Select your certificate from the list and press **Enter**. The User Logon dialog box appears.

   d Enter a **User Name** and **Domain** and press **Enter**.

7 If you choose **PEAP**:

   a Choose **Properties > Run App**. The Auth. Settings box appears.

   b Choose **Validate Server** and press **Enter**. When the radio starts to authenticate, the Network Password dialog box appears.

   c Enter a **User Name** and **Password** and select **Save Password**.

   d (Optional) In the **Domain** field, enter the Active Directory domain associated with the user account.

8 Save your settings.

### Enabling WPA or WPA2 Personal (PSK) Security With Microsoft

After you configure the communications and radio parameters on your mobile computer and select Microsoft as your security choice, you can configure WPA or WPA2 Enterprise (802.1x) security with Microsoft.

To configure WPA or WPA2 Personal (PSK) with Microsoft security:

1 Start Intermec Settings.

2 Choose **Communications > 802.11 Radio > Microsoft Security**.

3 For **Infrastructure Mode**, choose **Infrastructure**.

4 For **Network Authentication**, choose **WPA-PSK**. **Data Encryption** automatically defaults to **TKIP**.

5 For **Pre-Shared Key**, enter the pre-shared key or the passphrase.

   The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters. The value must match the key value on the authenticator. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the mobile computer internally converts it to a pre-shared key.

6 Save your settings.

### Configuring 802.1x Security with Microsoft

After you configure the communications and radio parameters on your mobile computer and select Microsoft as your security choice, you can configure 802.1x security with Microsoft.

To configure 802.1x security with Microsoft security:

1 Start Intermec Settings.

2 Choose **Communications > 802.11 Radio > Microsoft Security**.

3 For **Infrastructure Mode**, choose **Infrastructure**.

4 For **Network Authentication**, choose **Open**.

5 For **Data Encryption**, choose **WEP**.

6 For **802.1X Authentication**, choose **TLS** or **PEAP**.

7 If you choose **TLS**:

   a Choose **Properties > Run App**. The Auth. Settings box appears.

   b Choose **Select**.

   c Select your certificate from the list and press **Enter**. The User Logon dialog box appears.

   d Enter a **User Name** and a **Domain**.

8 If you choose **PEAP**:

   a Choose **Properties > Run App**. The Auth. Settings box appears.

   b Select **Validate Server** and press **Enter**. When the radio starts to authenticate, the Network Password dialog box appears.

   c Enter a **User Name** and **Password** and select **Save Password**.

   d (Optional) In the **Domain field**, enter the domain.

e Press **Enter**.

9 For **Network Key Setting**, choose **Automatic**.

10 Save your settings.

### Configuring Static WEP Security With Microsoft

After you configure the communications and radio parameters on your mobile computer and select Microsoft as your security choice, you can configure static WEP security with Microsoft. Intermec recommends that you use WPA2-PSK instead of WEP if possible.

To configure static WEP security with Microsoft:

1 Start Intermec Settings.

2 Choose **Communications > 802.11 Radio > Microsoft Security**.

3 For **Network Authentication**, choose **Open**.

4 For **Data Encryption**, choose **WEP**.

5 For **Network Key Setting**, choose **Enter Key and Index**.

6 For **Network Key Value**, enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio.

Set a 5-byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be preceded by 0x and contain 5 or 13 hex pairs.

7 For **Network Key Index**, select the key you want to use for data transmission. Save your settings.

8 Save your settings.

### Using Open (No Security) Associations With Microsoft

You can configure your mobile computer for no security with Microsoft.

To configure Open security with Microsoft:

1 Start Intermec Settings.

2 Choose **Communications > 802.11 Radio > Microsoft Security**.

3 For **Network Authentication**, choose **Open**.

4 For **Data Encryption**, choose **Disabled**.

5 Tap **OK**. Your settings are saved.

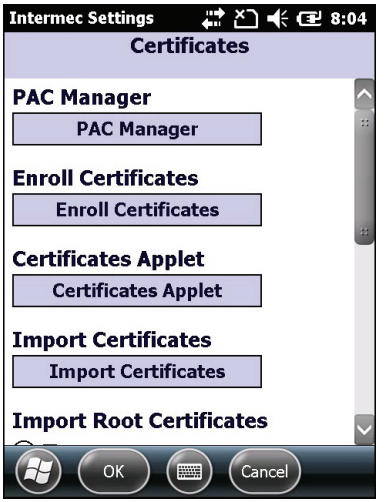
## Loading a Certificate

To use transport layer security (TLS) with WPA or 802.1x security, you need a unique client certificate on the computer and a trusted root certificate authority (CA) certificate. Certificates are pieces of cryptographic data that guarantee a public key is associated with a private key. They contain a public key and the entity name that owns the key. Each certificate is issued by a certificate authority.

To load certificates:

1 Start Intermec Settings

2 Tap **Communications > 802.11 Radio > Certificates**. The Certificates screen appears.




3 Tap **Import Certificates**. the CertImportUI screen appears.

4 If you want to import a certificate chain:

a Tap the **<<<** button next to the **Select pfx to import** field.

b Select the root certificate from the list.

c Tap **Import Certificate**.

5 If you want to import user and root certificates from a Microsoft IAS server:

   **a** Tap **Web Enrollment**.

   **b** Enter the **User**, **Password**, and **Server** (IP address) to log into the server.

   **c** Tap **OK**. A dialog box appears asking if you want to load the root certificate.

   **d** Tap **OK**. The Enrollment Tool message box appears telling you that the certificate has been added.

   **e** Tap **OK** to close the message box.

# 8

# Managing the Computer

Use this chapter to learn how to remotely update, configure, and monitor your Intermec mobile computers. You will also find information on installing and developing software applications as well as how to upgrade the system software.

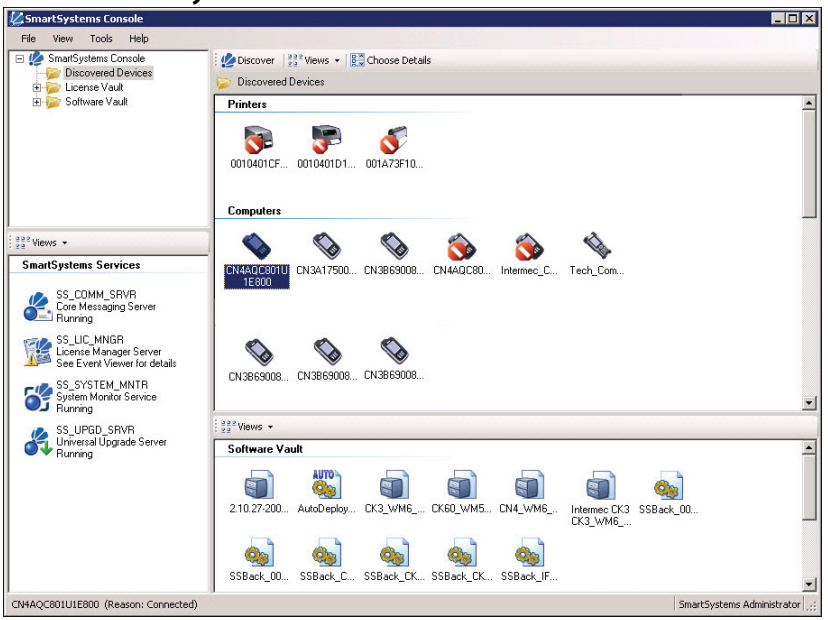
# How to Manage the Computer in Your Network

When you have multiple mobile computers and peripherals in your network, it is essential to have an easy way to manage updates, configure all of the devices, and remotely troubleshoot problems. Intermec provides a free device management software platform called SmartSystems™ to help you manage your devices. You can also purchase third-party device management software through a vendor.

## How to Manage the Computer Using SmartSystems

Intermec's SmartSystems Foundation is a software platform that lets you manage all of your SmartSystems-enabled devices simultaneously from a central server. The SmartSystems Foundation Console displays all SmartSystems-enabled devices in your network.

***Intermec SmartSystems Foundation Console***



Through the SmartSystems Foundation Console, you can:

- drag-and-drop configuration bundles, operating system updates, and firmware upgrades to multiple devices.
- save configuration settings from a single device and deploy those settings to many devices simultaneously.
- remotely change settings on SmartSystems-enabled computers and peripherals.

The SmartSystems Foundation Console can report on asset locations and battery status, making it easier to manage your mobile devices.

Your mobile computer ships with a Provisioning license. With this license, SmartSystems Foundation can automatically push software, configuration settings, and other files to a single mobile computer. The license also enables ScanNGo, which makes connecting additional mobile computers to your wireless network as easy as reading bar codes. SmartSystems Foundation can be downloaded at no charge from the Intermec web site. For more information, visit **www.intermec.com\SmartSystems**.

To manage multiple mobile computers, you need to purchase a Management license. For help, contact your local Intermec sales representative.

## How to Manage the Computer Using Third Party Software

You can use third-party software such as Wavelink Avalanche to centrally manage your Intermec devices. Device management software enables you to update software, increase security, track your assets, and troubleshoot devices remotely. You can download the Wavelink Enabler for the computer from the Wavelink web site. For more information, visit the Intermec web site and search for Wavelink Avalanche or visit **www.wavelink.com** to download the enabler.

# Developing and Installing Applications

Use the Intermec Resource Kits to develop applications to run on the mobile computer. The Resource Kits are a library of C++, .NET, Java, and web components grouped by functionality that you can use to create applications for the computer. The Resource Kits are part of the Intermec Developer Library (IDL), and can be downloaded from the Intermec web site at **www.intermec.com/idl**.

For more information, see the ***Intermec Developer Library Resource Kit Developer's Guide***.

## Packaging Your Application

For very simple applications, the executable file may be the only file you need to deploy. More typically, you will have a set of files to install.

Intermec recommends using .cab files to install your applications. The computer uses standard Windows Mobile .cab files and will install third-party .cab files.

## Choosing a Target Location

You can have your .cab file place your application in any of these memory locations on the mobile computer:

- The ObjectStore.
- The optional microSD card. Depending on available disk space, you may want to consider installing your application files on the microSD card. Using a card creates the Storage Card folder on the computer.
- The non-volatile Flash File Store. Applications and data in the Flash File Store will persist through a clean boot.

Files copied to any of these locations are safe when you cold boot the computer. When AutoRun is installed on the computer, all .cab files in the CabFiles folder are automatically extracted after a cold boot. For more information about AutoRun, see the ***Intermec Developer Library Resource Kit Developer's Guide***.

## Installing Applications Using SmartSystems Foundation Console

You can use the SmartSystems Foundation Console to drag-and-drop Intermec applications onto your mobile computer.

To install applications using SmartSystems Foundation Console:

1. Download your application file from the Intermec web site and unzip it on your desktop PC.
2. Double-click the application file to install it. The application file should appear in the Software Vault.
3. From the SmartSystems Foundation Console in the Software Vault, drag-and-drop the application onto each mobile computer in your network, or drop the application on a group of computers contained in a folder.

## Installing Applications Using Microsoft ActiveSync or Windows Mobile Device Center

If you only have a few computers to update with applications, you can copy the files from your PC using Microsoft ActiveSync (Windows XP or earlier) or Windows Mobile Device Center (Windows Vista or Windows 7). ActiveSync and Windows Mobile Device Center are a free applications available from the Microsoft web site at **www.windowsmobile.com/getstarted**.

To install applications by copying files from your PC:

1. Physically connect your CS40 to your PC using the power and data y-cable accessory.
2. Create a connection between your PC and mobile computer using ActiveSync or Windows Mobile Device Center.
3. Copy the .cab files from your PC to the mobile computer.
4. After the boot process is finished, browse to the .cab files and tap the files to install them.

## Installing Applications Using a MicroSD Card

If you do not have a network connection or cannot connect your mobile computer to your PC, you can use a microSD card to install applications.

To install applications using a storage card:

1. Copy your application to the microSD card.
2. Install the card in the mobile computer.
3. On the mobile computer, browse to the card and run your application.

## Launching Applications Automatically

There are two ways to launch an application automatically on a cold boot:

- Set up your .cab file to place a shortcut to the application in the \Windows\StartUp directory at install time.
- Use AutoRun.exe to start your application at boot time. AutoRun ships on the computer and automates other operations.

At boot time, AutoRun executes any commands found in its data file, AutoRun.dat. Follow the next procedure to create this data file for your mobile computer.

For more information on AutoRun, see the ***Intermec Developer Library Resource Kit Developer's Guide***.

To configure AutoRun:

1. In Notepad, create a file called AutoUser.dat.
2. Write this command in the file:

   RUN "Path\AppName.exe" arg1, arg2, arg3

   where:

   Path is the path to the directory where the application resides.

   AppName.exe is the application name.

   arg1, arg2, and arg3 are optional command line arguments.

   For example, to launch MyProgram.exe located in the Flash File Store, the command is EXEC "Flash File Store\Apps\MyProgram.exe".

   Because AutoRun handles quoted file names for the first parameter, you can specify path names or file names containing white spaces. AutoRun only supports one set of quotes per command.
3. Copy AutoUser.dat to the \Windows\Startup directory on the mobile computer.

# Updating the System Software

The mobile computer uses Image Update to update the operating system (OS) and the system software. Image Update uses incremental packages to allow for smaller and faster updates because the contents are stored in flash ROM.

Update packages persist through a cold or clean boot and cannot be removed by the end user. The Image Update process also provides strengthened security because all packages are signed. Image Update packages (.pkg or .pks files) may contain elements such as DLLs, executable (.exe) files, and .cab files.

You can use either of these methods to update your mobile computer:

- You can update multiple computers at the same time using the SmartSystems Foundation Console. For help, see the next section, **Updating Multiple Computers Using SmartSystems Foundation Console**.
- You can update individual computers by transferring the packages to the mobile computer and then installing them from the mobile computer.

If you are using SmartSystems Foundation Console to update the mobile computer, you can purchase a Provisioning license to send the Image Update silently. For more information, see **"How to Send Image Updates Silently" on page 91**.

## Updating Multiple Computers Using SmartSystems Foundation Console

You can use the SmartSystems Foundation Console to update the operating system or system software on your mobile computer. The SmartSystems Foundation Console is available from the Intermec web site through the Intermec Developer Library (IDL). Before you can update your mobile computer, you need:

- SmartSystems Foundation. To download SmartSystems Foundation, go to **www.intermec.com/idl** and open the Device Management page.
- the SmartSystems bundles you want to install. The SmartSystems bundle contains the Image Update package file. These SmartSystems bundles are available from the Intermec web site at **www.intermec.com**. Go to **Support** > **Downloads**.
- a Provisioning license.

To update the mobile computer using SmartSystems Foundation Console:

1. Open the SmartSystems Foundation Console.
2. Make sure the SmartSystems Foundation Console and the mobile computer are on the same subnet or connected across subnets and they are connected wirelessly or through Ethernet.

3. Make sure the mobile computer is in communications dock or a charging dock, or that power management is not set to turn off the computer if it is not charging.
4. Download the SmartSystems bundle to your PC.
5. Double-click the SmartSystems bundle on your PC to extract the update files to the Software Vault.
6. From the SmartSystems Foundation Console, locate the bundles to install and drag them to each mobile computer (or group in a folder) you want to update. The SmartSystems Foundation Console installs the update on your mobile computers.

   After the download is complete, your mobile computer begins the update process and automatically performs a cold boot. The computer then boots into a special Update Loader mode where the computer has no network connections and is completely unusable. This process can take anywhere from 30 seconds to 15 minutes depending on the update.

   After the update is complete, the computer boots again.
7. When a confirmation dialog box appears requesting user input, dismiss it.

**Note:** The SmartSystems console indicates that your mobile computer is offline, by displaying a red stop symbol, until the computer reboots and reconnects to the system.

## How to Send Image Updates Silently

If you want to automatically download and send update packages to your mobile computers, you can purchase a Provisioning license.

The silent updates do not require any user intervention and begin when you choose to have the update process start. SmartSystems Foundation users are notified when update packages are released so that they can download then and update their Intermec computers. For more information, see the SmartSystems Foundation Help.

# Updating Individual Mobile Computers

You can download update packages from your PC to your mobile computer using Microsoft ActiveSync (Windows XP or earlier), Windows Mobile Device Center (Windows Vista or Windows 7), or any other file transfer method you choose. ActiveSync and Windows Mobile Device Center are free applications available from the Microsoft web site at **www.windowsmobile.com/getstarted**.

To update an individual mobile computer:

1. Download the Image Update packages you want to install from the Intermec web site at **www.intermec.com**. Go to **Support** > **Downloads**.
2. Transfer the Image Update packages from your PC to the mobile computer.
3. On your mobile computer, tap **Start** > **Programs** > **File Explorer** and navigate to the location of the Image Update package.
4. Tap the package to start the installation. Your mobile computer begins the update process and automatically performs a cold boot.

**Make sure to keep the computer connected to power. Removing power will damage the mobile computer.**

The computer then boots into a special Update Loader mode where the computer has no network connections and is completely unusable. This process can take anywhere from 30 seconds to 15 minutes depending on the update.

After the update is complete, the mobile computer boots again.

5. When a confirmation dialog box appears requesting user input, dismiss it.

# 9

# Troubleshooting and Maintaining the Computer

If you encounter any problems while using the mobile computer, you can use the information in this chapter to find a possible solution. If you are not able to solve the problem, you can contact Intermec Product Support. You can also use the information in this chapter to learn how to reset and clean the mobile computer.

# Troubleshooting Your Mobile Computer

Use the troubleshooting tables in this section to fix problems with the Bluetooth connection, Wi-Fi connection, the phone, the imager, the camera, or general problems with operating the mobile computer.

If you send the mobile computer in for service, it is your responsibility to save the computer data and configuration. Intermec is responsible only for ensuring that the hardware matches the original configuration when repairing or replacing the computer.

## Troubleshooting the Wi-Fi Connection

Use this troubleshooting table to help solve problems with your 802.11 radio connection.

### *Problems With the Wi-Fi Connection*

| Problem | Solution |
|---|---|
| When you turn on the computer after it was suspended for a while (10 to 15 minutes or longer), it can no longer send or receive messages over the network. | Host may have deactivated or lost current terminal emulation session. In a TCP/IP direct connect network, turn off the "Keep Alive" message from host to maintain the TCP session while the computer is suspended. |
| The mobile computer is connected to the network and you move to a new site to collect data. Your mobile computer now shows you are not connected to the network. | Move closer to an access point or to a different location to reestablish communications until you reconnect with the network. Any data collected while out of range is transmitted over the network. |
| The mobile computer appears to be connected to the network, but you cannot establish a terminal emulation session with the host computer. | There may be a problem with the host computer, with the connection between the Intermec Application Server and the host computer, or with the connection between the access point and the host computer. Check with the network administrator to make sure the host is running and allowing users to login to the system. |
| The mobile computer appears to be connected to the network, but the host computer is not receiving any information from the mobile computer. | There may be a problem with the connection between the access point and the host computer. Check with the network administrator or use your access point user's manual. |

| Problem | Solution |
| --- | --- |
| A network connection icon appears in the toolbar, but then disappears. | The mobile computer may not be communicating with the intended access point. Make sure the mobile computer network name matches the access point network name. Default network name is "INTERMEC."<br>The access point may not be communicating with the server. Ensure the access point is turned on, properly configured, and has 802.1x security enabled. |

# Troubleshooting 802.1x Security

Use the following table to troubleshoot problems with your 802.1x security that will prevent you from connecting to your network, such as a missing WEP key value or an incorrect password.

### *Problems With 802.1x Security*

| Problem | Solution |
| --- | --- |
| The computer indicates it is not authenticated. | Make sure that:<br>• the User Name and Password parameters on the computer must match the user name and password on authentication server. You may need to reenter the password on both the computer and authentication server.<br>• on your authentication server, the user and group are allowed and the group policy is allowed to log into the server. For help, see the documentation that shipped with your authentication server software.<br>• the IP address and secret key for access point must match the IP address and secret key on the authentication server. You may need to reenter the IP address and secret key on both your access point and authentication server.<br>• the authentication server software is running on the server PC. |
| You receive a message saying "The server certificate has expired or your system date is incorrect" after you perform a clean boot on the computer. | Date and time are not saved when you perform a clean boot. Reenter the date and time, and then save your changes. |

# Checking 802.11 Network Status

If you have trouble connecting to your 802.11 wireless network:

- make sure you have correctly set network parameters on the mobile computer.
- check your wireless security settings.

Use iConnect to verify available access points and networks, check signal strength, and view other diagnostics. This information can also be helpful if you need to contact Intermec Product Support.

To use iConnect to verify the network status:

1. Tap the iConnect icon ( ) in the lower right corner of the mobile computer screen.
2. Choose **Status > Wireless**.
3. Tap **Advanced**. The diagnostics screen appears.

   The ISpy tab shows the:

   - MAC address and IP address of the 802.11 radio.
   - network association status, including the SSID and MAC address of the access point.
   - security configuration.
   - radio transmit power and signal strength information.
4. Tap the **Scan** tab to view a list of available 802.11 networks. The list includes the signal strength, channel, and MAC address for each network.
5. Tap **Scan** to refresh the screen.
6. Tap the **Supp** tab to view radio supplicant information, including a list of supplicant events and authentication status.
   - To verify the settings for the currently active security profile, tap **Configure Profile**. The Profile Wizard for the active profile appears.
   - To try reconnecting to the network, tap **Reconnect**.
   - To delete the events in the list, tap **Clear Events**.

7. Tap the **Ping** tab to run a ping test to the host:
   a. In the **Host** field, enter the IP address of the host.
   b. From the **Repetitions** list, choose the number of times the mobile computer will ping the host.
   c. Tap **Ping**. The graph shows the amount of time it takes for the host to return the ping. Tap **List** to see this information in a list format.
8. Tap the **RSSI** tab to view the received signal strength of the host signal.

   The information box includes the current signal strength, host SSID name, MAC address, data rate, and transmit power.
9. Tap **Mark** to place an arrow marker above the graph.
10. Tap the **Conf** tab to set up a log file that lists RSSI history.

    This screen includes the 802.11 radio driver version and available radio modes.

    To create a log file:
    a. Check the **Log to File** check box.
    b. (Optional) Change the sample period and number of samples displayed.
    c. Tap **Log File**. The Save As screen appears.
    d. (Optional) Change the name of the saved log file, the folder to which the file will be saved, the content type (log or text), and the location.
    e. Tap **Save**.

# Troubleshooting Data Capture

Use this section to troubleshoot problems that may prevent you from being able to read a bar code such as the symbology not be enabled.

| Problem | Solution |
|---|---|
| You cannot see a red beam of light from the imager when you press the Scan button and aim the imager at a bar code label. | • You may be too far away from the bar code label. Try moving closer to the bar code label and scan it again.<br>• You may be reading the bar code label "straight on." Change the reading angle and try again.<br>• The imager hardware trigger might be disabled in Intermec Settings. To check the setting go to **Start > Settings > Systems > Data Collection > Scanner Settings**. Hardware trigger should be checked. |
| When you release the **Scan** button, the **Good Read** LED does not turn off. | The **Good Read** light stays on if you configure the computer to use continuous/edge triggering. If you configure the computer for level triggering and the **Good Read** light remains on, there may be a problem. Press one of the **Scan** buttons or pull the trigger again without scanning a bar code label. If the light is still on, contact your local Intermec representative. |
| The scanner does not read the bar code labels quickly, or the scanning beam seems to be faint or obscured. | The scanner window may be dirty. Clean the window with a solution of ammonia and water. Wipe dry. Do not allow abrasive material to touch the window. |
| You scan a valid bar code label to enter data for your application. The data decoded by the scan module does not match the data encoded in the bar code label. | The computer may have decoded the bar code label in a symbology other than the label's actual symbology. Try scanning the bar code label again. Make sure you scan the entire label. |
| The input device attached to the computer does not work well or read bar code labels very quickly. | Set the Scanner Model command to the specific attached input device. Check enabled bar code symbologies and enable only the symbologies being used. |

| Problem | Solution |
| --- | --- |
| The scanner will not read the bar code label. | • Aim the scanner beam to cross entire bar code label in one pass. Vary the scanning angle.<br>• Check the quality of the bar code label. Scan a bar code label that you know will scan. Compare the two bar code labels to see if the bar code quality is too low. You may need to replace the label that you cannot scan.<br>• Make sure the bar code symbology is enabled and configured correctly. Use Intermec Settings to check the symbologies. Expand **Data Collection** > **Symbologies** beneath devices listed (scanner, virtual wedge) to check and enable symbologies, then scan the bar code label again.<br>• Make sure the computer application is expecting input from a bar code. You may need to type this information instead. |

## Troubleshooting Operating the Computer

Use this section to troubleshoot problems that may prevent you from being able to operate the computer.

| Problem | Solution |
| --- | --- |
| You tap the screen and nothing happens. | Align your screen. For help, see **"Aligning the Screen" on page 23**. |
| The computer appears to be locked up and you cannot enter data. | • Press and hold the **Power** key for ten seconds to warm boot the computer.<br>• Try reloading the firmware. For help, see **"Updating the System Software" on page 89**.<br>• If the computer does not boot or reset, contact your Intermec representative for help. |

| Problem | Solution |
| --- | --- |
| You press the **Power** key and nothing happens. | The battery status LED indicates the following states:<br>• If the battery status LED is a steady green, the battery is more than 95% charged and computer is on a charger.<br>• If the battery status LED is blinking red, the battery is low. Charge the battery.<br>• If the battery status LED is a steady red, the main battery is on charge.<br>• If the battery status LED is orange, the computer is trying to charge and either the battery temperature is outside of the charging range, or the battery is defective. |
| You cannot type a character on the keypad or you can only type uppercase or lowercase letters. | You may have locked a modifier key on the keypad. Press the necessary key sequence to unlock the key. For help, see **"About the Keypad" on page 11**. |
| The phone feature is not working. | Before you can use the phone, you need to activate it. For help, see **"Activating the UMTS Phone" on page 30**. |
| You installed Intermec Terminal Emulator (ITE) or the Intermec Client Pack (ICP), and now the phone does not work. | By default, while ITE is running, the phone is disabled. You can enable the phone by modifying the **Allow Phone Operations** ITE setting in Intermec Settings. |

# Calling Product Support

If you cannot find the answer to your problem in **"Troubleshooting Your Mobile Computer" on page 94**, you can visit the Intermec technical knowledge base (Knowledge Central) at **intermec.custhelp.com** to review technical information or to request technical support. If you still need help after visiting Knowledge Central, you may need to call Product Support. To talk to an Intermec Product Support representative, call:

1-800-755-5505

Before you can call Intermec Product Support, make sure you have the following information ready:

- Configuration number
- Serial number
- Operating system version
- SmartSystems Platform Bundle (SSPB) version
- If you are using security, know the type (Funk or Microsoft) and the full set of parameters
- Power management settings
- If you are using terminal emulation (TE), know the version and protocol. If you are not using TE, know the language your custom application was written in and the tools you used to create it.

You can find most of the information listed above in Intermec Settings. Consult your application developer for information on your custom application.

## Finding Your Configuration Number

Use the following procedure to help you find the configuration number of your mobile computer.

- Look at the label on the back of the computer.

## Finding Your Operating System Version

Use the following procedure to help you find your mobile computer's OS version.

1. Tap **Start > Internet Explorer**.
2. Tap the **Intermec** logo. The Intermec page appears and displays the software build information.

# Resetting the Computer

You rarely need to reset the computer. If the computer does not resume after pressing the **Power** button, or if the computer or an application locks up, you may need to reset the computer. The computer uses the configuration currently saved in flash memory during the boot process. There are three ways to reset the computer:

- Warm booting the computer
- Cold booting the computer
- Clean booting the computer

## Warm Booting the Computer

You may need to perform a warm boot to correct conditions where an application stops responding to the system. There are two ways to do this:

To warm boot the computer:

1. Tap **Start > Programs > Shut Down**.

   Or, scan this bar code.

   The computer systematically shuts down.
2. Press the **Power** button to restart the computer. If the computer is connected to an external power supply, it automatically restarts.

## Cold Booting the Computer

In some cases where the computer completely stops responding, you may need to perform a cold boot. Cold booting may result in data loss, so use this method only if all other recovery methods have failed.

**Note:** Cold booting the computer does not guarantee that cached disk data will be saved, so transactional data may be lost during the reset. All other data, such as computer configuration and network settings, is preserved.

To cold boot your computer:

1. If possible, tap **Start > Programs > Shut Down**.
2. Remove the battery pack from the computer and wait at least 30 seconds.
3. Install the battery pack and press the **Power** button.

## Clean Booting the Computer

Caution

**A clean boot erases the memory in the mobile computer, including all applications and data files found in the ObjectStore, and loads only the default files and programs required by the computer operating system.**

Caution

**During a clean boot, the computer first looks for the SSPB files on an installed microSD card. If no card is found, the computer loads the SSPB files in the Flash File Store. Files found on a microSD card during a clean boot are copied into the Flash File Store and overwrite the existing SSPB files.**

If the computer seems to be locked up, try warm booting and then cold booting the computer. If neither method works, use a clean boot to get the computer up and running for further troubleshooting.

To clean boot the computer:

1. Remove the battery pack from the computer and wait at least 30 seconds.
2. Install the battery pack and press the **Power** button.
3. When the computer starts the boot process, simultaneously press and hold ◄ and ► until the IPL Boot Configuration Menu appears.

```
IPL Boot Configuration Menu
---------------------------
(1) Force Image Update: No
(2) Force Clean Boot  : No
(3) Passive KITL      : No
(0) Continue with Boot...
```

4. Press 2 to select **Force Clean Boot**, and then press 0 to select **Continue with Boot**.

   The computer clean boots. This process takes a few minutes.

5. When prompted, tap the screen to set up the computer.
6. Follow the instructions to align the screen.

# Cleaning the Computer

To keep the computer in good working order, you may need to clean the imager window, color camera window, and the touch screen. Clean the windows and the touch screen as often as needed for the environment in which you are using the computer. To clean the computer, use a solution of mild soap and warm water.

**There are no user-serviceable parts inside the computer. Opening the computer will void the warranty and may cause damage to the internal components.**

To clean the image window, camera window, and touch screen:

1. Tap **Start > Shutdown** to turn off the computer.
2. Dip a clean cloth towel in the soapy water and wring out the excess.
3. Wipe the imager window, camera lens, and flash area. Do not allow any abrasive material to touch these surfaces.
4. Wipe off any excess soap with a clean cloth towel dipped in warm water.
5. Wipe dry.

# A

# Specifications and Default Settings

Use this appendix to reference the physical and environmental specifications for the CS40 and its default settings. You can also use this appendix to learn about the Windows Mobile 6.5 applications on the CS40.

# Physical and Environmental Specifications

## CS40 Physical Dimensions

| | |
|---|---|
| Dimensions | 13.3 x 6.3 x 2.4 cm (5.2 x 2.5 x 0.9 in) |
| Weight | 196 g (6.9 oz) |

## Environmental Specifications

| | |
|---|---|
| Operating temperature | -10°C to 50°C (14°F to 122°F) |
| Charging temperature | 5°C to 30°C (41°F to 86°F) |
| Storage temperature | -25°C to 70°C (-13°F to 158°F) |
| Relative humidity (operating) | 5% to 95% non-condensing |
| Environmental rating | IP54 compliant |
| Drop Specifications | All corners and sides from 1.8 m (6 ft) per MIL-STD 810G |

## Power and Electrical Specifications

| | |
|---|---|
| Battery type | Rechargeable Lithium-ion (Li-ion) battery |
| Battery capacity | 3.7 V, 1430 mAh (5.2 Wh) |
| Electrical rating | ⎓ 5 V, 1,5 A |

## Hardware

| | |
|---|---|
| Main processor | ARM 11, 528 MHz |
| Radio processor | ARM 9, 320 MHz |
| Memory | 256 MB RAM (approximately 150 MB available for user applications) |
| Persistent storage | 512 MB Flash (approximately 350 MB available for user applications) |
| Removable storage | up to 32 GB user-accessible microSD card slot |
| Keypad | QWERTY, Numeric |
| Imaging options | 3.2 megapixel color camera and EA11 area imager |

## Operating System

Microsoft Windows Mobile 6.5.3

## Touch Screen Specifications

Trans-reflective TFT-LCD display; QVGA color with touch panel; 240 x 320 pixels; 7.1 cm (2.8 in) diagonal active area; 5-level LED backlight control with settings.

## Standard Communications

- UMTS/HSUPA
- GPS
- 802.11b/g
- Bluetooth
- USB high speed 2.1 OTG©

## Wireless LAN

| | |
|---|---|
| Standards compliant | IEEE 802.11b/g (2.4 GHz) |
| Data rates | up to 54 Mbps |
| Security | 802.11i, WPA, 802.1x, WEP<br>(EAP-TLS, TTLS, LEAP, PEAP, EAP-FAST) |
| Certifications | WPA2, WPA, Wi-Fi, Cisco Compatible Extensions (CCX v4.0) |

## Regulatory Approvals

cULus Listed, DEMKO, NOM, BSMI, Class B – FCC/ICES/EN, GOST-R

## Bar Code Symbologies

The EA11 imager supports these bar code symbologies:

| | |
|---|---|
| AustraliaPost | Infomail |
| Aztec | Intelligent Mail |
| BPO | Interleaved 2 of 5 |
| CanadaPost | JapanPost |

| | |
|---|---|
| Codabar | Matrix 2 of 5 |
| Codablock A | Maxicode |
| Codablock F | Micro PDF417 |
| Code 11 | MSI |
| Code 39 | PDF417 |
| Code 93 | Planet |
| Code 128/GS1-128 | Plessey |
| DataMatrix | Postnet |
| DutchPost | QR Code |
| EAN/UPC | Standard 2 of 5 |
| GS1 Composite | SwedenPost |
| GS1 DataBar Expanded | Telepen |
| GS1 DataBar Limited | TLC 39 |
| GS1 DataBar Omni-Directional | |

## CS40 Micro-AB USB Connector Specifications

The CS40 has a standard Micro-AB USB connector:

- 1 A maximum charge when using the universal cell phone charger accessory
- maximum VBUS output power of 5 V @ 100 mA

## CS40 Docking Connector Specifications

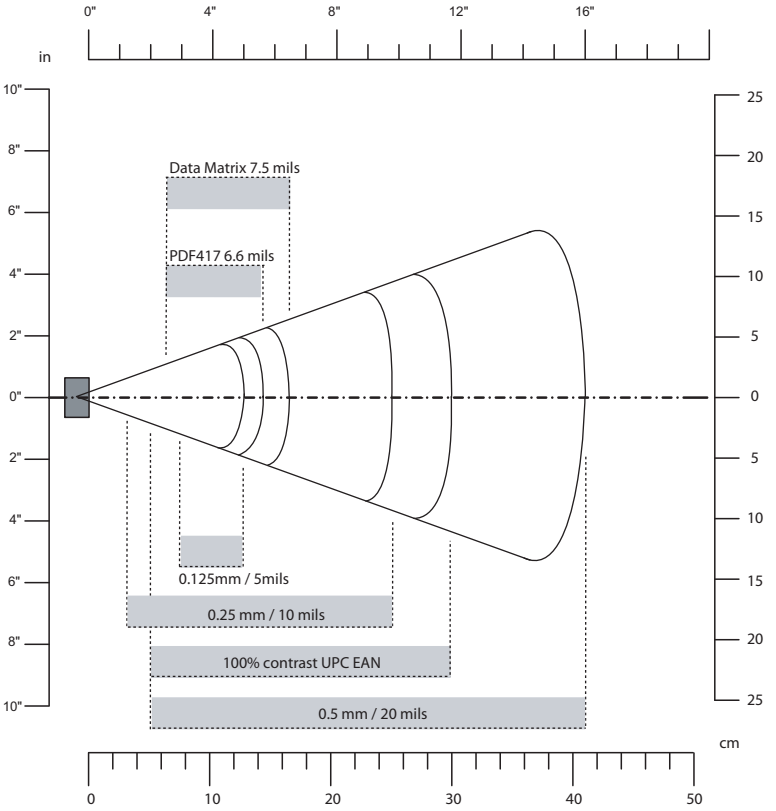
The CS40 has an array of seven pin surface contacts that provide USB "On the Go" (OTG) connectivity and charge power while docked.

### *CS40 Docking Connector Specifications*

| Pin Number | Signal Name | Description |
|---|---|---|
| 1 | VEXT | Computer power |
| 2 | ID | Identification pin |
| 3 | VBUS | VBUS (5 V @ 100 mA max) |
| 4 | D- | USB data signal |
| 5 | D+ | USB data signal |
| 6 | GND | Ground (power return) |
| 7 | GND | Ground (power return) |

# EA11 Area Imager Minimum Reading Distances

Minimum distances are measured in the dark (0 lux).



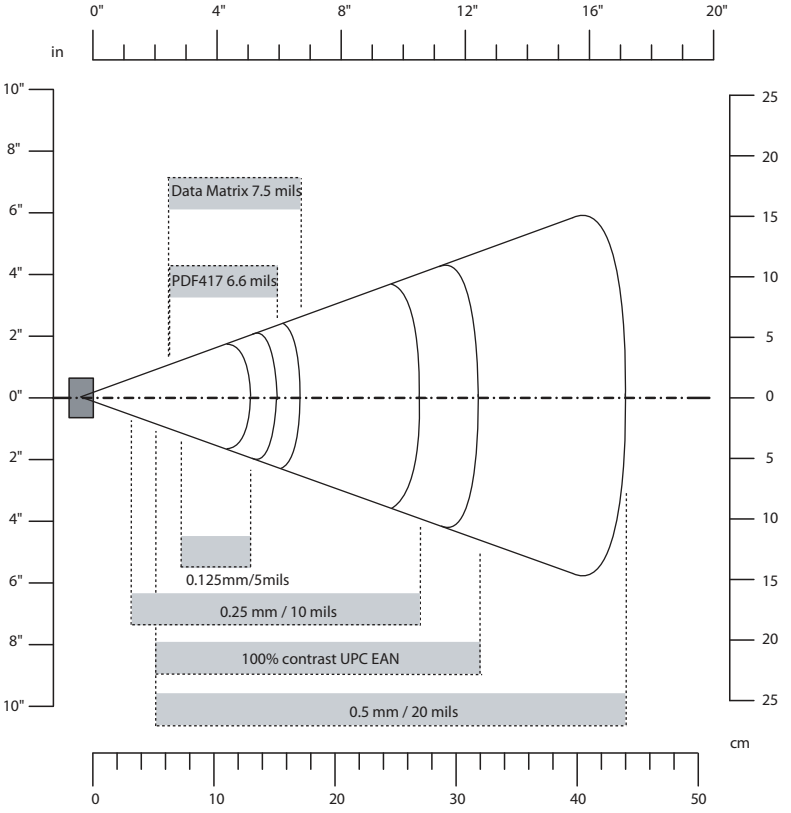

### *EA11 Minimum Reading Distances*

| Symbology | Density | Minimum Distance | Maximum Distance |
|---|---|---|---|
| Code 39 | 0.125 mm (5 mil) | 7.26 cm (2.86 in) | 12.09 cm (4.76 in) |
| | 0.20 mm (8 mil) | 3.96 cm (1.56 in) | 20.98 cm (8.26 in) |
| | 0.25 mm (10 mil) | 3.45 cm (1.36 in) | 25.04 cm (9.86 in) |
| | 0.50 mm (20 mil) | 4.98 cm (1.96 in) | 40.28 cm (15.86 in) |
| UPC/EAN | 0.33 mm (13.0 mil) | 4.98 cm (1.96 in) | 29.62 cm (11.66 in) |
| Data Matrix | 0.191 mm (7.5 mil) | 3.71 cm (2.46 in) | 16.41 cm (6.46 in) |
| | 0.254 mm (10 mil) | 5.98 cm (2.35 in) | 20.73 cm (8.16 in) |
| | 0.381 mm (15 mil) | * | 27.58 cm (10.86 in) |

| Symbology | Density | Minimum Distance | Maximum Distance |
|---|---|---|---|
| PDF417 | 0.168 mm (6.6 mil) | 6.25 cm (2.46 in) | 13.87 cm (5.46 in) |
| | 0.254 mm (10 mil) | 4.47 cm (1.76 in) | 21.74 cm (8.56 in) |
| | 0.381 mm (15 mil) | 4.98 cm (1.96 in) | 33.43 cm (13.16 in) |

# EA11 Area Imager Typical Reading Distances

Typical distances are measured in an office environment (250 lux).



### EA11 Typical Reading Distances

| Symbology | Density | Minimum Distance | Maximum Distance |
|---|---|---|---|
| Code 39 | 0.125 mm (5 mil) | 7.2 cm (2.8 in) | 13.1 cm (5.1 in) |
| | 0.20 mm (8 mil) | 3.8 cm (1.5 in) | 22.5 cm (8.8 in) |
| | 0.25 mm (10 mil) | 3.4 cm (1.3 in) | 27 cm (10.5 in) |
| | 0.50 mm (20 mil) | 5.0 cm (2.0 in) | 44 cm (17.2 in) |
| | 1.0 mm (40 mil) | 8.0 cm (3.1 in) | 83 cm (32.4 in) |
| UPC/EAN 100% | 0.33 mm (13.0 mil) | 5 cm (2 in) | 32.0 cm (12.5 in) |
| Data Matrix | 0.191 mm (7.5 mil) | 6.3 cm (2.5 in) | 17.3 cm (6.7 in) |
| | 0.254 mm (10 mil) | 4.8 cm (1.9 in) | 22 cm (8.6 in) |
| | 0.381 mm (15 mil) | * | 29 cm (11.3 in) |
| PDF417 | 0.168 mm (6.6 mil) | 6.25 cm (2.46 in) | 15.4 cm (6 in) |
| | 0.254 mm (10 mil) | 4.5 cm (1.8 in) | 23 cm (9 in) |
| | 0.381 mm (15 mil) | 4 cm (1.6 in) | 37 cm (14.4 in) |

# Default Configuration

The following tables list the default values of the configuration settings supported on the mobile computer. If you restore the mobile computer to factory default settings, the mobile computer uses these values.

The settings are grouped by function and reflect the organization of Intermec Settings. For detailed information on most of the commands, see the ***Intermec Settings Command Reference Manual***.

## Data Collection Settings

Use data collection settings to configure the imager and to configure the bar codes that you want the imager to be able to read.

### Data Collection Settings

| Data Collection Setting | Default Value |
|---|---|
| Enable Scanner Port | On |
| BT-Configure On Connect | Overwrite with computer settings |

## Symbology Settings

| Symbology | Default Value |
|---|---|
| AustraliaPost | Disable |
| Aztec | Disable |
| BPO | Disable |
| CanadaPost | Disable |
| Codabar | Disable |
| Codablock A | Disable |
| Codablock F | Disable |
| Code 11 | Disable |
| Code 39 | Enable |
| Code 93 | Disable |
| Code 128/GS1-128 | Enable |
| DataMatrix | Enable |
| DutchPost | Disable |
| EAN/UPC | Enable UPC A, UPC E, EAN 8, EAN 13 |
| GS1 Composite | Disable |
| GS1 DataBar Expanded | Disable |
| GS1 DataBar Limited | Disable |
| GS1 DataBar Omni-Directional | Disable |
| Infomail | Disable |
| Intelligent Mail | Disable |
| Interleaved 2 of 5 | Disable |
| JapanPost | Disable |
| Matrix 2 of 5 | Disable |
| Maxicode | Disable |
| Micro PDF417 | Disable |
| MSI | Disable |
| PDF417 | Enable |
| Planet | Disable |
| Plessey | Disable |
| Postnet | Disable |
| QR Code | Disable |

| Symbology | Default Value |
|---|---|
| Standard 2 of 5 | Disable |
| SwedenPost | Disable |
| Telepen | Disable |
| TLC 39 | Disable |

## Symbology Option Settings

| Symbology Option Settings | Default Value |
|---|---|
| Preamble | None (Disabled) |
| Postamble | None (Disabled) |
| Symbology Identifier | Disable |
| Multicode | Disable |

## Scanner Settings

| Scanner Settings | Default Value |
|---|---|
| Trigger Predefined Modes | Level - Aimer Off |
| Trigger Mode | Level |
| Aimer Activation | Off |
| Hardware Trigger | Enable |
| Turn Off After Good Read | Enable/One-shot |

## Imager Settings

| Imager Settings | Default Value |
|---|---|
| Predefined Modes | 1D and 2D Standard |
| Signature Image Capture | Disable |
| Image Capture | Enable |

## Decode Security Settings

| Decode Security Settings | Default Value |
|---|---|
| Consecutive Data Validation | 0 |
| Identical Consecutive Timeout | 300 ms |
| Different Consecutive Timeout | 0 |

| Decode Security Settings | Default Value |
|---|---|
| Center Decoding | Disable |
| Center Decoding Tolerance | 0 |

# Communications

Use communications settings to configure how the mobile computer communicates with the network.

## Communications Settings

| Communications Setting | Default Value |
|---|---|
| Device Name | CS40xxxxxxxxxx |

## 802.11 Radio Settings

| 802.11 Radio Setting | Default Value |
|---|---|
| Security Choice | Funk |
| Allow Security Changes | Enabled |
| Active Profile | Profile 1 |
| DHCP | Enabled |
| Import Root Certificates | False |
| Import User Certificates | False |
| Import Pac Files | False |
| Radio Enabled | On |

## Ethernet Adapter Settings

| Ethernet Adapter Setting | Default Value |
|---|---|
| DHCP | Enabled |

## Bluetooth Settings

| Bluetooth Setting | Default Value |
|---|---|
| Bluetooth Power | Off |
| Bluetooth Discoverable | Disable |
| Bluetooth Connectable | Enable |

### WWAN Radio Settings

| WWAN Radio Setting | Default Value |
|---|---|
| WWAN Radio Enabled | On |

## Device Settings

Use device settings to configure settings on the mobile computer.

#### *Device Settings*

| Device Setting | Default Value |
|---|---|
| Adjust for Daylight Time | Off |
| Scan Button Remapping (Handle Trigger) | BRI |
| Scan Button Remapping (Right Scan Button) | Scanner |
| Scan Button Remapping (Left Scan Button) | Scanner |
| Scan Button Remapping (Middle Scan Button) | Scanner |
| Power Profiles | Standard |
| Power Button | Off When Pressed |
| Device Off (Battery Power) | 2 min |
| Display Off (Battery Power) | 1 min |
| Device Off (External Power) | Disabled |
| Display Off (External Power) | Disabled |

#### *Good Read Settings*

| Good Read Setting | Default Value |
|---|---|
| Internal Scanner Good Read Beep | One Beep |
| Bluetooth Scanner Good Read Beep | One Beep |

#### *Volume Settings*

| Volume Setting | Default Value |
|---|---|
| Beeper and Voice | Medium |
| Headset Beeper | Very Low |

### *Screen Settings*

| Screen Setting | Default Value |
|---|---|
| Backlight - Battery Power | |
| Backlight turns off after | 1 minute |
| Backlight Level | Level 2 |
| Backlight - External Power | |
| Backlight turns off after | Disable |
| Backlight On Tap | Enable |
| Backlight Level | Level 2 |

### *Keypad Settings*

| Keypad Setting | Default Value |
|---|---|
| Keypad Backlight Timeout | 15 seconds |

### *Power Management Settings*

| Power Management Setting | Default Value |
|---|---|
| Battery Power | |
| Device turns off after | 5 minutes |
| Screen turns off after | Disable |
| External Power | |
| Device turns off after | Disable |
| Screen turns off after | Disable |

### *Profiles Settings*

| Profiles Setting | Default Value |
|---|---|
| Camera | |
| Disable Camera Scan | Display |
| Enable Camera Scan | Display |
| Power | |
| Always On | Display |
| Maximize Battery Life | Display |
| Normal | Display |
| Scanning | |
| 1D Bar Codes Optimized | Display |
| Bright Sunlight | Display |
| Reflective Labels | Display |
| Standard | Display |

# GPS Settings

Use GPS settings to configure how the mobile computer communicates with the GPS network.

### *GPS*

| Setting | Default Value |
|---|---|
| Extended Ephemeris Data | Disable |
| Download Interval | Disable |
| Download Interval Start Time | 1:00 AM |
| Download Interval Stop Time | 3:00 AM |
| Push Interval | Disable |
| Push Interval Start Time | 1:00 AM |
| Push Interval Stop Time | 3:00 AM |
| Poll Period | Disable |
| Position Change | 50 m |
| Fix Interval | 0 |
| WAAS | Disable |
| Baud Rate | 33,600 |

# Device Monitor Settings

Use device monitor settings to configure how the mobile computer monitors the network.

### *Device Monitor*

| Setting | Default Value |
|---|---|
| Poll Period | 1 min |
| Backup Battery Charge Remaining | 10 |
| Storage Load | 90 |
| Memory Load | 90 |

# Core Messaging Service Settings

Use core messaging service settings to configure the Keep Alive ping interval.

### *Core Messaging Service*

| Setting | Default Value |
|---|---|
| Keep Alive Ping Interval | 30 s |

# Virtual Wedge Settings

Use virtual wedge settings to configure the virtual wedge.

### *Virtual Wedge Setting*

| Setting | Default Value |
|---|---|
| Virtual Wedge | Enable |
| Grid | Null |

# B

# Keypads and Keystrokes

# Standard Characters

Use the following tables to learn how to enter standard and other available characters and functions with the keypad. If there is no sequence of keystrokes for a particular character or function, it is only available through the soft input panel (SIP), which can be accessed by tapping the keyboard icon on the touch screen.

### *Alphanumeric Characters*

| Character | Numeric Keypad | QWERTY Keypad |
|---|---|---|
| a | blue 2 | A |
| b | blue 2 2 | B |
| c | blue 2 2 2 | C |
| d | blue 3 | D |
| e | blue 3 3 | E |
| f | blue 3 3 3 | F |
| g | blue 4 | G |
| h | blue 4 4 | H |
| i | blue 4 4 4 | I |
| j | blue 5 | J |
| k | blue 5 5 | K |
| l | blue 5 5 5 | L |
| m | blue 6 | M |
| n | blue 6 6 | N |
| o | blue 6 6 6 | O |
| p | blue 7 | P |

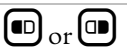
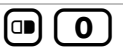
| Character | Numeric Keypad | QWERTY Keypad |
|---|---|---|
| q | ◀D 7 7 | Q |
| r | ◀D 7 7 7 | R |
| s | ◀D 7 7 7 7 | S |
| t | ◀D 8 | T |
| u | ◀D 8 8 | U |
| v | ◀D 8 8 8 | V |
| w | ◀D 9 | W |
| x | ◀D 9 9 | X |
| y | ◀D 9 9 9 | Y |
| z | ◀D 9 9 9 9 | Z |
| A | ◀D 1 2 | ⇧ A |
| B | ◀D 1 2 2 | ⇧ B |
| C | ◀D 1 2 2 2 | ⇧ C |
| D | ◀D 1 3 | ⇧ D |
| E | ◀D 1 3 3 | ⇧ E |
| F | ◀D 1 3 3 3 | ⇧ F |
| G | ◀D 1 4 | ⇧ G |
| H | ◀D 1 4 4 | ⇧ H |
| I | ◀D 1 4 4 4 | ⇧ I |
| J | ◀D 1 5 | ⇧ J |
| K | ◀D 1 5 5 | ⇧ K |

| Character | Numeric Keypad | QWERTY Keypad |
|---|---|---|
| L | ◧D 1 5 5 5 | ⇧ L |
| M | ◧D 1 6 | ⇧ M |
| N | ◧D 1 6 6 | ⇧ N |
| O | ◧D 1 6 6 6 | ⇧ O |
| P | ◧D 1 7 | ⇧ P |
| Q | ◧D 1 7 7 | ⇧ Q |
| R | ◧D 1 7 7 7 | ⇧ R |
| S | ◧D 1 7 7 7 7 | ⇧ S |
| T | ◧D 1 8 | ⇧ T |
| U | ◧D 1 8 8 | ⇧ U |
| V | ◧D 1 8 8 8 | ⇧ V |
| W | ◧D 1 9 | ⇧ W |
| X | ◧D 1 9 9 | ⇧ X |
| Y | ◧D 1 9 9 9 | ⇧ Y |
| Z | ◧D 1 9 9 9 9 | ⇧ Z |
| 0 | 0 | ◧D 💡 |
| 1 | 1 | ◧D Y |
| 2 | 2 | ◧D U |
| 3 | 3 | ◧D I |
| 4 | 4 | ◧D H |
| 5 | 5 | ◧D J |

| Character | Numeric Keypad | QWERTY Keypad |
|---|---|---|
| 6 | 6 | Blue K |
| 7 | 7 | Blue B |
| 8 | 8 | Blue N |
| 9 | 9 | Blue M |

### *Characters and Functions*

| To Enter | Numeric Keypad | QWERTY Keypad |
|---|---|---|
| @ (at symbol) | N/A | Blue Q |
| & (ampersand) | N/A | Blue S |
| * (asterisk) | N/A | Blue C |
| : (colon) | N/A | Blue D |
| , (comma) | N/A | Blue X |
| $ (dollar) | N/A | Blue E |
| ! (exclamation) | N/A | Blue O |
| - (hyphen) | Blue * | Blue G |
| % (percent) | N/A | Blue R |
| . (period) | . | . |
| + (plus) | Blue # | Blue T |
| # (pound) | # | Blue V |
| ? (question mark) | N/A | Blue A |
| ‘ (apostrophe) | N/A | Blue Z |
| Forward Tab | Tab | Tab |

| To Enter | Numeric Keypad | QWERTY Keypad |
|---|---|---|
| Backspace | | |
| Up Arrow | | |
| Down Arrow | | |
| Left Arrow | | |
| Right Arrow | | |
| CapsLock | | |
| Enter | | |
| ok | | |
| Shift |  or | |
| Space |  | |
| Start (Windows) | | |
| Esc | | |
| Backlight | | |
| Talk | | |
| End call | | |

# C

# Imager Configuration Bar Codes

You can use the imager configuration bar codes to quickly configure the EA11 imager in your computer. These bar codes allow you to enable or disable symbologies, reset to factory defaults, and set predefined imager modes.

# Basic Configuration Bar Codes

| Command | Bar Code |
|---|---|
| Disable all symbologies | |
| Reset to Factory Defaults | |
| Postamble with Carriage Return and Line Feed | |

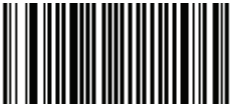
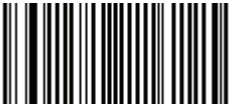
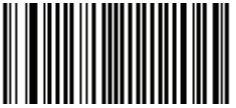
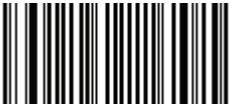
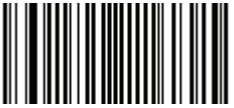
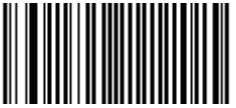
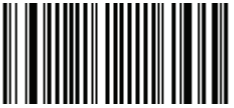
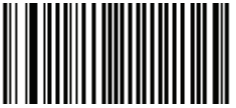
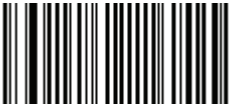
# Imager Predefined Modes

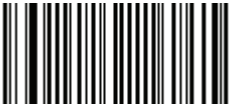
| Command | Bar Code |
|---|---|
| 1D codes only | |
| Standard 1D and 2D codes | |
| 1D and 2D codes bright environment | |
| 1D and 2D codes with reflective surface | |

# Symbology Bar Codes

| Symbology | Enable Bar Code | Disable Bar Code |
|---|---|---|
| AustraliaPost | | |
| Aztec | | |
| BPO | | |
| CanadaPost | | |
| Codabar | | |
| Code 11 | | |
| Code 39 | | |
| Code 93 | | |
| Code 128 | | |

| Symbology | Enable Bar Code | Disable Bar Code |
|---|---|---|
| DataMatrix | | |
| DutchPost | | |
| EAN 8 | | |
| EAN 13 | | |
| GS1 128 | | |
| Interleaved 2 of 5 | | |
| JapanPost | | |
| Matrix 2 of 5 | | |
| MaxiCode | | |
| Micro PDF417 | | |

| Symbology | Enable Bar Code | Disable Bar Code |
|---|---|---|
| MSI Code | |  |
| PDF417 |  |  |
| Planet | | |
| Plessey Code | | |
| Postnet |  | |
| QR Code |  |  |
| Standard 2 of 5 |  | |
| Telepen | |  |
| TLC 39 | | |
| UPC-A |  | |

| Symbology | Enable Bar Code | Disable Bar Code |
|---|---|---|
| UPC-E | | |
| UPC-E1 |  | |

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